The

British Medical Journal

The Journal of the British Medical Association.

WITH SUPPLEMENT.

No. 3059. SATURDAY, AUGUST 16, 1919. **Price 1/-**

NOTICE.

THE MEDICAL DIRECTORY.

The issue for 1920 being in preparation, all practitioners should now make returns to the Editors. A fresh circular, if needed, will be sent on application.

Owing to demobilization the changes of addresses, appointments, etc., in the New Issue will exceed all previous experience. Copies will therefore be of unusual value.

Terms: 18s. to those who prepay.

Advertisers should take advantage of the increased circulation, due to the return of normal conditions.

7, GREAT MARLBOROUGH ST., LONDON, W. 1.

BY C. O. HAWTHORNE, M.D.

STUDIES IN CLINICAL MEDICINE

Price 6s. net.

"A valuable miscellany of clinical studies."
—*Edin. Med. Journ.*

"Covers the ground of clinical medicine in an able manner."—*Canada Lancet.*

"Should be in the possession of every general practitioner."—*Prescriber.*

BALE & DANIELSSON, Gt. Titchfield Street, W. 1.

OXFORD MEDICAL PUBLICATIONS.

JUST PUBLISHED.

THE FUTURE OF MEDICINE

By SIR JAMES MACKENZIE, F.R.S., M.D., F.R.C.P., LL.D.Ab. & Edin., F.R.C.P.I.(Hon.), Consulting Physician to the London Hospital.

Demy 8vo. Cloth. Illustrated. Price 3/6 net.

FRACTURED FEMURS,

Their Treatment by Calliper Extension.

By MAURICE G. PEARSON, C.B.E., M.B., F.R.C.S., Major South African Medical Corps, and J. DRUMMOND, M.D., M.R.C.P., Captain South African Medical Corps.

Royal 8vo. Cloth. Illustrated. 10/6 net.

HENRY FROWDE AND HODDER & STOUGHTON, 17, Warwick Square, Newgate St., London, E.C. 4.

8vo, Cloth. 5s. 6d. net. (Postage 3d. extra.)

DISEASES OF THE EAR IN SCHOOL CHILDREN.

An Essay on the Prevention of Deafness.

By JAS. KERR LOVE, M.D., Aurist to the Glasgow Institution for the Deaf and Dumb, to the Glasgow School Board, &c., &c.

"The book makes interesting reading."—*Lancet.*

"This book should be perused. It contains lessons for all."—*Journal of Laryngology.*

Bristol: JOHN WRIGHT & SONS, Ltd.
London: SIMPKIN & Co., Ltd.

BY FREDERICK W. PRICE, M.D., F.R.S.(Edin.), Physician to the Great Northern Central Hospital. Assistant Physician to the National Hospital for Diseases of the Heart, London.

DISEASES OF THE HEART.

Their Diagnosis, Prognosis, and Treatment by Modern Methods.

With a Chapter on the Electro-Cardiograph.

Demy 8vo, 484 pp. Very fully Illustrated. 21s. net

Lancet.—"By great care, and by the use of an amazing amount of material, he has accomplished what many readers have been waiting for, giving us a complete account of the diagnosis, prognosis, and treatment of heart diseases by modern methods in association with all the invaluable teaching bequeathed to us by the older masters of clinical observation."

British Medical Journal.—"The book presents a comprehensive account of modern knowledge of cardiology."

Edinburgh Medical Journal.—"Taken as a whole the book is, from the practitioner's standpoint, one of the best of the many monographs on the heart that has appeared in recent years."

Dublin Medical Journal.—"It is probably destined to take the place in the library of the present day physician that was occupied some twenty or more years ago by Sir W. Broadbent's well-known work."

Practitioner.—"In his evident desire to place before his readers a succinct, and at the same time, a comprehensive account of cardiac disease in the light of modern knowledge, Dr. Price has certainly succeeded."

Midland Medical Review.—"It is impossible to enumerate the many excellencies of this book."

London:
HENRY FROWDE AND HODDER & STOUGHTON.

JUST PUBLISHED. SECOND EDITION.

HYPNOTISM AND TREATMENT BY SUGGESTION.

By ALBERT E. DAVIS, F.R.C.S.Ed., L.R.C.P., Hon. Phys. to the Liverpool Psycho-Therapeutic Clinic.

Of all Booksellers. Price 3/6 net. Post free 3/9.

"A fascinating book."—*Daily News.*

"We hope the book will have a large circulation, and we wish it all success."—*The Medical Times.*

SIMPKIN, MARSHALL & Co., Ltd.: London.

By O. LEYTON, M.D., D.Sc., F.R.C.P.
Physician to the London Hospital,

THE MODERN (ALLEN) TREATMENT OF DIABETES MELLITUS.

SECOND EDITION. NOW READY. Price 4/- net.

ADLARD & SON & WEST NEWMAN, LTD., Bartholomew Close, London, E.C. 1.

BY

SIR PETER FREYER, K.C.B.

Enlargement of the Prostate.

A Work based on 1,500 Cases of the Operation.
(FOURTH EDITION in preparation.)

Surgical Diseases of the Urinary Organs.
(SECOND EDITION in preparation.)

BAILLIERE, TINDALL & COX,
8, Henrietta St., Covent Garden, London, W.C. 2.

2ND EDITION. Entirely reset and revised. 54 Illus. 15/- net.

MENTAL DISEASES.

A Text-Book of Psychiatry for Medical Students and Practitioners.

By R. H. COLE, M.D., F.R.C.P.

JOURNAL OF MENTAL SCIENCE.—". . . "There is a breadth of view, a comprehensiveness of plan and a surprising completeness of detail in little space, and its numerous illustrations and plates are decidedly good."

UNIVERSITY OF LONDON PRESS, Ltd.,
18, Warwick Square, London, E.C.

MILITARY MEDICAL MANUALS

Under the general Editorship of Sir ALFRED KEOGH, G.C.B., LL.D., M.D., F.R.C.P., Hon. F.R.C.S., and Lt.-Gen. T. H. J. C. GOODWIN, C.B., C.M.B., D.S.O.

LATEST VOLUMES IN THE SERIES NOW READY

DISABILITIES OF THE LOCOMOTOR APPARATUS BY AUG. BROCA Edited by Major-Gen. Sir ROBERT JONES, F.R.C.S., C.B., A.M.S. Price 7/6 net.

ELECTRO DIAGNOSIS OF WAR By J. ZIMMERN and P. PEPROL, Prof. of the Faculty of Paris. Edited by E. P. CUMBERBATCH, M.D., M.R.C.P. Price 7/6 net.

MENTAL DISORDERS OF WAR By J. A. LEPINE, Prof. in Clinics of Nervous Diseases the University of Lyons. Edited by CHARLES MERCIER, M.D., F.R.C.P., F.R.C.S. Price 7/6 net.

WOUNDS OF THE PLEURA AND OF THE LUNG By R. GREGOIRE and A. COURCOUX. Translated and Edited by Lt.-Col. C. H. FAGGE, M.S. Price 7/6 net.

From THE TIMES.—"A series of really first-class Manuals of medicine and surgery . . . . The Translations are admirably made. They give us in English that clearness of thought, that purity of style which are so delightful in French medical literature, and are as good in form as in substance."

UNIVERSITY OF LONDON PRESS,
18, Warwick Square, London, E.C.

Now Ready. Pp. xi. + 269. With 3 Charts. 5s. net.

ON ALCOHOLISM:

Its Clinical Aspects and Treatment.

By FRANCIS HARE, M.D.,
Medical Superintendent of the
NORWOOD SANATORIUM,
Beckenham.

"Marked by candour, common sense, and moderation . . . likely to become the standard text-book."—*British Medical Journal.*

London: J. & A. CHURCHILL,
7, Great Marlborough Street, W. 1.

Pp. viii + 262, with 51 Illus. Price 7s. 6d. net.

DISORDERS OF THE HEART.

By ALEXANDER MORISON, M.D., F.R.C.P., Senior Physician to Great Northern Central Hosp., &c.

"*The book merits careful perusal and consideration, as it contains many striking criticisms of current theories and a new marshalling of ascertained facts.*"
—BRITISH MEDICAL JOURNAL

London: BAILLIERE, TINDALL & COX,
8, Henrietta Street, Covent Garden, W.C. 2.

THE HOUSE WITH A POLICY.

I.—Research.

The house of Parke, Davis & Co. came into existence 52 years ago, and it is proper to ask what motives have actuated it during this long period of service. Both Mr. Parke and Mr. Davis with prophetic vision realised from the first that if the Company was ever to become great it must represent some definite fundamental ideas. It must give the world something that the world did not possess before.

Research was one of the first, as it has always been one of the most important, departments of work to which we have devoted our energies and resources. From the commencement of our firm's history we have continuously engaged in original investigation. In the early days, when the vegetable materia medica played a larger rôle than it does now, we were instrumental in placing many new plant drugs at the disposal of the medical profession. Very many of these drugs subsequently became official in the various National Pharmacopœias.

Later on, in the natural evolution of materia medica, original work was undertaken in chemical and biochemical investigation, and this resulted in the discovery of a considerable number of medicinal agents that have proved of distinct value. Of many such products we need only mention Adrenalin, Pituitrin, and Apothesine—one of the latest introductions—to show the importance of the work done by us.

During the last 25 years our researches have been specially devoted to subjects in the field of biological and glandular therapy. As early as 1894 we established a laboratory for the production of antitoxic serums, and more recently we have devoted ourselves to the investigation and elaboration of the comparatively modern subject of vaccine therapy.

It is not our purpose to enumerate the new vegetable, chemical, biological and glandular products that we have introduced from time to time. Our object is merely to indicate the part we have played in the development of materia medica during the last half century.

Our research work has not always been devoted to the purpose of turning out marketable products. We have frequently spent large sums in exhaustive investigations, which, in all probability, would never lead to any commercial advantage, but which have been undertaken with the primary desire to be of service to the medical profession and to humanity.

In order to illustrate the direction and character of our research work during the past few years, the following selection of articles emanating from our Research Laboratory and published in various scientific and medical journals will be of interest:—

Production of Immunity with over-neutralised Diphtheria Toxin.

An Investigation of the Depressor Action of Pituitary Extracts.

The Physiology of the Pituitary Gland and the Action of its Extracts.

The Relations of Pyogenic Micro-organisms to the Etiology and Treatment of Skin Diseases.

Serum Treatment of Hæmorrhage and Blood Dyscrasias.

The Heart Tonic Unit.

Physiological Testing.

The Iodine Content of Thyroid Glands.

On the Cultivation of the Treponema Pallidum.

Drug Influence on Extrasystoles of the Mammalian Heart.

The Rationale of the Use of Adrenalin in the Treatment of Asthma.

The Germicidal Action of the Ultra-violet Rays.

A Sero-enzyme Test for Syphilis.

The Phenomenon of Anaphylaxis: Its Clinical Significance and Practical Utilisation.

In addition to those mentioned above, members of our scientific staff have communicated to professional journals numerous articles recording researches carried out in bacteriology, immunisation therapy, and materia medica employed by the medical, dental, and veterinary professions.

PARKE, DAVIS & COMPANY,

DETROIT, NEW YORK, MONTREAL, LONDON, BOMBAY, SYDNEY, BUENOS, AIRES, &c.

Laboratories at Detroit (U.S.A.); Walkerville (Canada); Hounslow (Eng.); and Sydney (N.S.W.).

The Montgomery Lectures
IN
OPHTHALMOLOGY.

DELIVERED IN TRINITY COLLEGE, DUBLIN, JUNE, 1919.

BY

GORDON HOLMES, C.M.G., C.B.E., M.D., F.R.C.P.,
PHYSICIAN, ROYAL LONDON OPHTHALMIC HOSPITAL; PHYSICIAN TO OUT-PATIENTS, NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, QUEEN SQUARE, LONDON.

LECTURE I.—THE CORTICAL LOCALIZATION OF VISION.

IN my first lecture I will attempt to place before you the evidence we now possess as to the regions of the surface of the brain where the images of objects that fall on the retinae excite visual sensations.

Owing to the decussation of a portion of the fibres of the optic nerves in the chiasma, each optic tract conveys impressions from the same sides of both eyes—that is, impressions excited by the retinal images of objects in the opposite halves of the visual fields. And since each tract terminates in the primary optic centres of the same side, and the optic radiations that spring from here pass to the same side of the brain, a total lesion of any part of the one optic system above the chiasma produces hemianopia, or blindness in the opposite halves of the visual fields.

It has only been within recent years that, as a result of many anatomical, physiological, clinical, and pathological investigations, we have acquired any accurate information as to the region of the cortex where retinal impressions excite visual sensations. These investigations indicate that the visual centres lie within and along the lips of the posterior parts of the calcarine fissures, and that they probably correspond to that portion of the cortex characterized by the presence of Gennari's line, which Professor Elliot Smith has called the area striata. In most brains this striate area extends around the occipital pole on to the lateral surface of the hemisphere.

Until lately, too, we possessed very little evidence of the manner in which the different segments of the retinae are represented in the visual cortex, but, owing to the large number of cerebral injuries that have been produced by gunshot wounds, the late war has given us an unequalled opportunity to investigate this problem. Numerous observations by myself and others have provided fuller data on which to discuss it. In March, 1916, I published, in collaboration with my colleague, Sir W. T. Lister, a communication on this subject; last year I was able to amplify the views which we then put forward, and to-day I wish to place before you such final conclusions as I can draw from a very large number of observations.

Two facts tend to make these conclusions less convincing than they might be. In the first place my earlier observations were made in France, where it was not possible to keep patients long under observation, and the defects of vision that were then recorded might be, to some extent, due to the temporary dynamic changes in the brain generally associated with gunshot injuries of the skull rather than to local destructions of the visual cortex. That areas of local blindness did not, as a rule, alter materially after the first two or three weeks is a strong argument that they were not produced only by such transient disturbances, and this assumption is confirmed by the fact that in some of the patients I have been able to examine as long as three and a half years later the state of the visual fields was practically unaltered. I have also had the opportunity of supplementing my earlier observations by the examination of several cases in which the visual disturbances were of much longer standing.

In the second place, since I have been able to correlate my clinical observations with the causative anatomical lesions in a few cases only, it has been possible for the most part to determine the portion of the brain that was injured only by measurements of the sites and the depths of the wounds. This method is certainly inexact, though the position of the area striata can be determined approximately, for the inion, or external occipital protuberance, has a fairly constant relation to its posterior end. In mesial sagittal sections of several heads I found that the posterior ends of the calcarine fissures lie 2 cm., or ¾ in., above its tip, and that the fissures extend forwards and upwards at an angle of about 25 degrees from there to a depth of about 4 cm. By careful measurement of the injury to the skull, or of the position of retained missiles as seen in stereoscopic radiographs, in relation to the inion the portion of the visual area that is injured may be determined approximately. Further information was obtained in many cases by examination during operations of the site and extent of the damage to the brain.

We must, however, await the opportunity of correlating the visual defects with the anatomical lesions that caused them in a large series of cases before finally receiving such conclusions as I can place before you into the body of accepted fact, though if these conclusions establish a hypothesis that can explain all our observations, or is at least not at variance with them, there will be strong presumptive evidence that it represents the truth.

I have selected as far as possible cases with long-standing or permanent visual defects to illustrate this lecture.

DESTRUCTION OF THE STRIATE AREA ON ONE SIDE.

Let us first consider the effect of a lesion which destroys the whole of the area striata of one hemisphere. A deeply penetrating gunshot wound of the occipital region immediately to one side of the middle line, and not more than 5 cm. above the inion, that passes forwards parallel to the mesial sagittal plane, must do so. I have seen several men with such wounds, and all had complete hemianopia, or total blindness to the opposite side of the fixation point. This blindness extends almost invariably up to the fixation point, or at least to within one degree of it, which is certainly within the margin of error of our clinical methods. The more accurate and delicate the methods employed the nearer is the blindness found to come to the point on which the eyes are directed. Observations on an ordinary perimeter cannot be exact enough to decide this question, but it can easily be verified by examination by a Bjerrum's or other screen which is placed at a distance of one or two metres from the patient's eye. This is the method I have employed to investigate vision in the neighbourhood of the fixation point.

In hemianopia due to vascular lesions of the visual cortex the blindness rarely extends up to the fixation point, and in this respect it differs from that produced by a traumatic injury of one occipital pole. The explanation of this difference will be considered later in this lecture. The area of blindness is liable to be more irregular, and does not involve central vision so constantly, when it is due to injury of the optic radiations.

We turn now to the cortical representation of those portions of the retinae which lie above and below the horizontal planes through the maculae. Local lesions in the region of the calcarine cortex frequently produce blindness in either the upper or the lower homonymous quadrants; the following case is an example of superior quadrantic hemianopia:

CASE I.

Pte. J. was wounded by a fragment of shell which penetrated his steel helmet in April, 1918. He was unconscious for a few minutes only, and on coming to noticed that his sight was affected. It improved rapidly after an operation that was performed on the same day, but he experienced some difficulty in reading when he was first examined three weeks later.

The wound was represented by a small defect in the skull immediately to the right of the middle line and just above the lateral sinus. An oblong piece of shell casing, which measured 3 × 1 × 1 cm., and several fragments of bone were removed from the brain, which was softened and disintegrated for a considerable distance beneath the fracture.

When he was seen three weeks after he had received the wound there was complete left superior quadrantic hemianopia, which reached exactly up to the fixation point, and, in addition, a peripheral contraction of the left lower quadrants. The latter gradually disappeared, so that five weeks later vision was lost in the upper quadrants only. The blindness still extended up to the fixation point, but it did not everywhere reach the horizontal meridians; there was a narrow zone along these in which a small white object was indistinct and frequently not perceived (Fig. 1). In the lower left quadrants white appeared greyish, and the colour of red and green test objects 10 mm. in diameter could not be recognized. Central vision was ⅞ in each eye.

Here we have a case in which a penetrating wound close to the middle line, immediately above the lateral sinus, and consequently below the level of the right calcarine fissure, produced an absolute superior quadrantic hemianopia. It is therefore evidence that the lower halves of the retinae are projected on to the lower parts of the

area striata. The loss of colour vision in the inferior quadrants was associated, as is the rule, with the slight degree of amblyopia there, which was indicated by the apparent indistinctness and greyness of a white test object in this portion of the field.

On the other hand, when blindness of the lower homonymous quadrants of the visual fields occurs as a result of cortical injuries, it is always associated with wounds above the level of the calcarine fissures. I have already recorded several cases with this condition, and it is not sufficiently rare to need specific illustration here. These cases go to prove that the upper halves of the retinae are represented in the upper or dorsal parts of the visual cortex, just as the lower segments of the retinae are projected on to its lower portion.

If a lesion of one occipital lobe above the level of the calcarine fissure produces an inferior quadrantic hemianopia, bilateral lesions in this position should cause blindness below the fixation point. I have seen eight cases of more or less pure inferior horizontal hemianopia, and in all of these the cerebral wounds were above the level of the calcarine fissures and involved, as far as could be determined, the upper portions of the striate areas. I have chosen the following case as an example, as it was possible to observe the patient ten months after the infliction of the wound, and its site indicated that it was the visual cortex rather than the optic radiations that were injured.

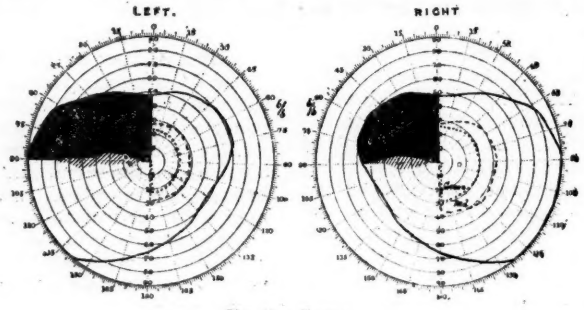


FIG. 1.—Case I.

CASE II.

Pte. L. was wounded in March, 1918, by a machine-gun bullet. He was unconscious for a short time. During the first few days he could distinguish only light from darkness, but his vision then improved rapidly. Its condition became stationary after an operation was performed three weeks later in a German hospital, for he had been made a prisoner of war. He states that when he tried to read during the next three months he always seemed to see the figure of a white hen to the left of the point to which his eyes were directed. I examined him in January, 1919.

The wound was represented by a healed and depressed scar, under which a trephine opening about 2 cm. in diameter could be felt. This involved the middle line of the skull; its centre was 5 cm. above the inion. Radiographic plates did not reveal any foreign bodies within the skull.

His central vision was $\frac{6}{6}$ in each eye. There was a large area of blindness in both lower quadrants, which was more extensive on the left than on the right side, and in the seeing portions of the left lower quadrants vision was misty and indistinct. (Fig. 2.)

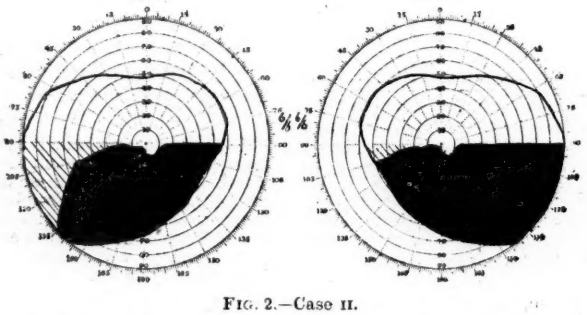


FIG. 2.—Case II.

In this case the injury of the brain was obviously above the level of the calcarine fissures, and it was consequently the dorsal portions of the areae striatae that must have been most severely injured.

I have not observed a pure case of superior horizontal hemianopia; the probable reason is that gunshot wounds involving the lower portions of both striate areas would necessarily produce such injury of the torcula as would be probably fatal.

CORTICAL LOCALIZATION OF CENTRAL VISION.

If the evidence from these and similar cases shows that the upper halves of the retinae are represented in the upper or dorsal parts of the calcarine areas and the lower in the lower or ventral, we may now turn to the consideration of the cortical localization of macular or central vision. The most satisfactory evidence on which to base conclusions would be obtained from cortical lesions that produce complete loss of central vision in both eyes. I have seen and recorded a certain number of these. The case that is cited here as an illustration was the only patient who was observed at a long period after the infliction of the wound.

CASE III.

Pte. G. was wounded by a large portion of shell that penetrated his steel helmet in May, 1918. He was unconscious for seventeen hours. In the casualty clearing station, where an operation was performed on the same day, a depressed fracture of the skull was found in the occipital region, and a mass of bone was removed from the longitudinal sinus and from the brain on each side of it. He was blind for the first three days, but his vision then rapidly improved to its present state. A month after the infliction of the wound his visual fields were examined by Mr. J. B. Lawford, who discovered a scotoma almost identical in size and position with that which I found nine months later.

Ten months after the injury the wound was firmly cicatrized; beneath the scar there was a more or less circular defect in the middle line of the skull and to the left, which involved the base of the inion and extended 4½ cm. upwards from it. Its lateral diameter was 5 cm. The vision was less than $\frac{6}{36}$ in each eye (according to his records it was $\frac{6}{9}$ when he enlisted in November, 1915), and he could not even recognize the other men in the ward. He saw nothing plainly, and had some difficulty in recognizing the distance of objects from him.

His peripheral vision was unaffected; he could see a circular white object 10 mm. in diameter to the natural limits in both eyes, but examination with a perimeter and by a screen revealed a large area of absolute blindness, which extended about 3 degrees to the left of the fixation point and from 12 to 18 degrees to its right. Central vision was totally abolished. (Fig. 3.) Above and to the left of this scotoma there was a small area in which white objects could be seen, but they appeared dull and dim; colours could not be recognized here, nor in a zone of about 2 degrees to the left margin of the scotoma.

The site of the wound makes it probable that both occipital lobes were injured at the posterior ends of the areae striatae, which were opposite the centre of the trephine opening. And both the position of the wound and the clinical symptoms indicate that the injury was more extensive on the left than on the right side.

This case illustrates the type of blindness that is produced by superficial injuries of both occipital poles—that is, by wounds that injure the posterior parts of the striate areas. In all such cases we find peripheral vision intact and central vision abolished. They are consequently evidence that central or macular vision is represented in the more posterior parts of the visual areas, and that this region is not concerned with peripheral sight.

The evidence to be obtained from unilateral lesions confirms this opinion and also supports the conclusion we have already arrived at, that the upper parts of the retinae are connected with the upper parts of the visual cortex and the lower with the lower.

Homonymous paracentral scotomata are frequently produced by injuries of the polar region of one occipital lobe. The visual fields in the following case represent a characteristic type:

CASE IV.

Pte. S. was wounded by a fragment of shell in October, 1918, and was operated on in a casualty clearing station on the same day. He was unconscious, or at least remembers nothing that happened, during the first few days. Then he discovered that he could not see properly to his left, but he frequently noticed flashes of light to this side which he compared to ordinary gun-flashes. He had also a feeling that "there was always something standing on the left side, a person or something," but he could distinguish no form. His vision improved quickly, but became stationary within a few weeks.

The wound was represented by a healed vertical scar in the occipital region immediately to the right of the middle line. Beneath it there was a defect in the skull, 4½ cm. in vertical length and 2 cm. broad, which extended from 1 cm. above the inion upwards, parallel to the mesial sagittal plane of the head.

I examined him in February, 1919. His vision was $\frac{6}{9}$ in each eye. He complained that in reading he had difficulty in finding the beginning of a line or paragraph, and even the first letters

of a long word. In the street he often failed to see people in front of him and to his left. The peripheral limits of his vision to a circular white object 7 mm. in diameter were normal, but there was a large left paracentral scotoma which extended from the fixation point to about 20 degrees to the left. Its edges were remarkably sharp and definite. (Fig. 4.)

In this case an injury of the right occipital pole, which must have involved the posterior end of the area striata, caused a left homonymous paracentral scotoma. This is the condition of the visual fields most commonly associated with lesions of this region. The scotoma generally extends up to the fixation point, and usually its size can be seen to bear a close relation to the depth of the wound. Such cases supplement the evidence we have already obtained that the centre for macular and perimacular vision lies near the posterior ends of the hemispheres. In another case, with a similar defect in the left sides of the visual fields, total destruction of the posterior part of the right striate area was found on *post-mortem* examination, when death took place five weeks after the infliction of the wound.

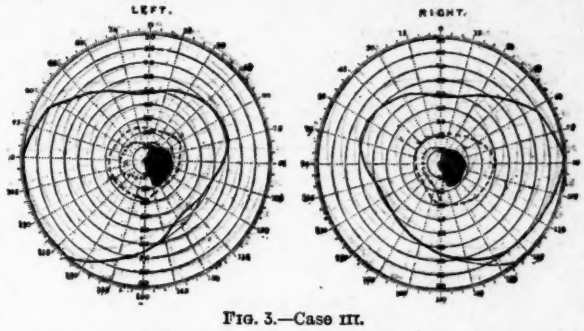


FIG. 3.—Case III.

Smaller paracentral scotomata are frequently limited to either the upper or lower homonymous quadrants. Their position in the field of vision always bears a close relation to the site of the wound—that is, they lie below the fixation point when the injury involves the upper and posterior end of the calcarine area, and above it when the ventral portion of the visual region is damaged. The following case is a typical example of an inferior paracentral scotoma.

CASE V.

Lieut. H. was wounded in November, 1915, by a bullet. He found at once that he could not see the ground at his feet properly. When he was examined four days later his only complaint was that on trying to read he could not see the lines immediately below that on which his eyes were directed, though the rest of the page was visible to him. There was a tangential scalp wound with its entry 2.5 cm. above and 4 c.m. to the right of the inion, while the exit was in the middle line 2 cm. above the inion.

Peripheral vision was undisturbed, but there was a small absolute paracentral scotoma in the left lower quadrants, which extended from the fixation point outwards and downwards to about 9 degrees. This patient was examined again recently, more than three and a half years after the infliction of the wound. Peripheral vision to both white and colours is unrestricted, and his visual acuity is $\frac{6}{6}$ in both eyes, but the paracentral scotoma remains practically unaltered, the only change being that he can now recognize a moving white object between 6 and 9 degrees from the fixation point, where he was at first totally blind. But in this narrow zone vision for white is still very defective, and colours cannot be recognized. (Fig. 5.) The only inconvenience he experiences is in his work as an accountant; in "running up" a column of figures he adds them correctly, but in "running down" a column he often fails to see the left-sided figures, that is, the hundred and the thousand units.

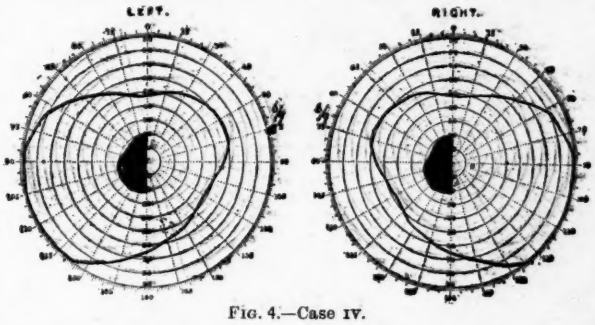


FIG. 4.—Case IV.

CASE VI.

This case is an instance of a superior paracentral scotoma. Pte. A. was wounded in September, 1918, by a fragment of shell which burst behind him while he was riding. He was dazed for a time but did not lose consciousness, and was able to ride alone to the first aid post, though his sight was considerably affected. He noticed no subjective visual phenomena. He was immediately transferred to a casualty clearing station, where part of the missile that was embedded in his skull, and splinters of bone that had been driven through the dura mater into the right occipital lobe, were removed. The wound healed rapidly.

The wound, five months later when I examined him, was represented by a scar slightly above and to the right of the inion, with roughened bone and a defect in the skull beneath it. Radiographic plates revealed a small circular trephine hole, 2 cm. in diameter, its centre being 1½ cm. above the inion.

He stated that his vision, which was at first seriously impaired, improved quickly, and that it was as good when he reached England a fortnight after being wounded as it was when I saw him. He complained only that he had difficulty in reading, as he generally missed the first few letters of long words.

His central vision was $\frac{6}{6}$ in each eye, and on examination with a perimeter the peripheral limits of the fields were found to be normal. He had, however, a small absolute scotoma to both white and colours to the left of the fixation point. It was carefully mapped out by the aid of a screen; the greater part of it lay in the left upper quadrants, into which it extended 5 to 6 degrees from the fixation point, but a small part projected into the lower quadrants. Its edges were remarkably sharp, and were identical to white and colours; an object moved from it into the seeing portions of his fields appeared suddenly as if it had come from behind a screen. The blindness extended directly up to the fixation point. (Fig. 6.)

In Case v the inferior paracentral scotoma was obviously due to an injury of the visual cortex produced by the wound which was situated above the level of the calcarine fissure; while in Case VI, where the scotoma lay chiefly in the upper quadrants, the causative lesion must have affected the lower and posterior part of the striate area, as the wound was immediately above the inion.

Bilateral paracentral scotomata are less common, but when they occur they furnish further confirmatory evidence of the conclusions to which we have already come. The following is a good illustrative case:

CASE VII.

Pte. B. was wounded by a machine-gun bullet which passed through his steel helmet in July, 1916. He was dazed or semi-conscious for a short time. He then walked alone to the dressing station, but repeatedly fell into shell holes and across obstacles as he could not see the ground before his feet. An operation was performed on the third day after the infliction of the wound, and a fortnight later he was transferred to England, where he remained in hospital for four months. During this time he stated he could see quite well, and was not aware that his vision was in any way affected. He volunteered for active service, and came to France again in July, 1918. I examined him in August of that year, more than two years after he was wounded.

The wound was indicated by a transverse horizontal scar, 8 cm. in length, which was bisected by the middle line and crossed it 4 cm. above the inion. Radiographic plates revealed two small circular openings in the skull, one on each side of the middle line; their lower margins were 2½ cm. above the point of the inion.

His central vision was $\frac{6}{5}$ in each eye and the peripheral limits of his visual fields for both white and colours were normal. There was, however, a large absolute bilateral inferior paracentral scotoma, more extensive in the right than in the left quadrants, which on the right came to one degree from the fixation point, and 2½ degrees from it on the left. This area of total blindness was surrounded by a zone in which a moving object could be seen, though it appeared grey and indistinct, and in which the colours of test objects could not be recognized. Except in this amblyopic area the colour fields were normal. (Fig. 7.)

In this man both hemispheres were obviously injured above the level of the calcarine fissures, and the resulting blindness was limited to the inferior quadrants. The fact that the blindness did not extend into the immediate area of the fixation point is probably to be attributed to the escape of the posterior extremities of the visual cortex.

Not infrequently two or more scotomata coexist, which may be separate from one another or united into a complex figure. It is on these cases that we can most easily test our hypothesis, and if by it we can explain the occurrence of the blind areas as a result of the anatomical sites of the wounds we have a strong argument that it is correct. The following case is an instance:

CASE VIII.

In this patient I found a right inferior paracentral scotoma, while to the left of the fixation point there was a similar

area of blindness, chiefly above the horizontal plane. This observation was made on a man six weeks after he received an oblique gutter wound which crossed the middle line of his skull 2 cm. above the inion; it passed from below upwards and to the left, and consequently injured the lower portion of the area striata on the r ght side, producing the left superior scotoma, and the upper part of the visual cortex on the left hemisphere, causing the defect in the right inferior quadrants. (Fig. 8.)

This series of cases illustrates the evidence that my observations can furnish on the cortical localization of central and pericentral vision. It proves that the macular and perimacular regions of the retinae are represented at or near to the occipital poles of the hemispheres. It is probable, indeed, that the portion of the area striata which frequently spreads over the occipital pole and on to the lateral surface of the brain may be the centre of macular sight. The frequency of paracentral scotomata is consequently accounted for by the more exposed position of this part of the visual area than of that which lies on the mesial surfaces of the hemispheres. It seems very probable, too, that the maculae have anatomically larger representations in the cortex than the less highly specialized peripheral zones of the retinae, and in this we may find the explanation of the frequency of small areas of blindness in the neighbourhood of the fixation point, though the causal lesions may be relatively gross.

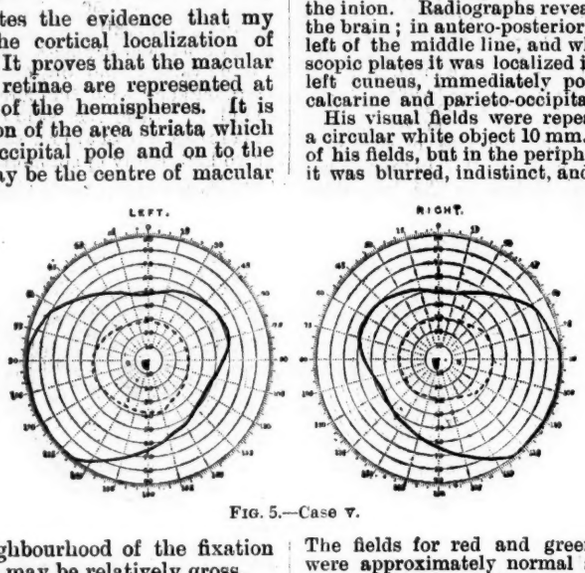


FIG. 5.—Case V.

LOCALIZATION OF PERIPHERAL VISION.

If all our experience points to a posterior representation of macular vision in the calcarine regions we may by exclusion assume that the centre for peripheral vision lies in the anterior part of the visual areas. There is, however, relatively little direct evidence of this. It is true that this region of the brain is not uncommonly injured by gunshot wounds, but as the anterior part of the calcarine area is surrounded on each side by the optic radiations that carry all visual impressions corticalwards, the visual defect produced by such a cortical lesion would be complicated by the presence of blindness due to interruption of the fibres of the radiations. Riddoch has, however, observed a case in which peripheral contraction of both halves of the visual fields was associated with the presence of a missile and fragments of bone between the mesial surfaces of the occipital lobes, in such a position that the anterior parts of the areae striatae were probably injured. I have also recorded a case with loss of peripheral vision in the homonymous fields in which a missile was localized at the junction of the calcarine and parieto-occipital sulci. The following case is further evidence in this question:

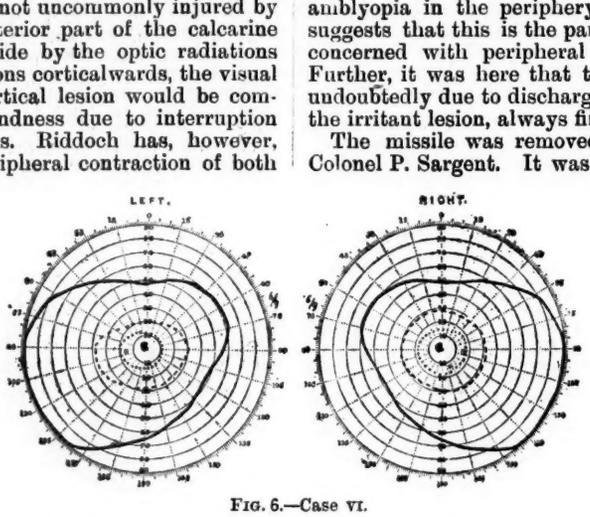


FIG. 6.—Case VI.

CASE IX.

Corporal W. was wounded by a fragment of shell in October, 1918. He was dazed for a few moments, but noticed no affection of his sight. He was operated upon in a casualty clearing station next morning. His wound healed quickly, and he remained free from symptoms, except headache, till February, 1919. Then one morning his right side became suddenly numb and weak, and a dull black spot appeared in vision; he referred it to the lower margin of the outer canthus of his right eye, and repeatedly tried to rub it away without success. After some minutes he began to see flashes of light, "like lightning, uncoloured," which flashed from the black spot towards the centre of his eye; these persisted for ten or fifteen minutes. Then he lost consciousness and was probably convulsed. This was the only severe fit he has had, but two minor attacks on an average have occurred every day since then. These always commence with the appearance of one or two black spots, which he refers to the lower margin of the right outer canthus. They are at first very faint, but become more and more distinct, and then flashes of light begin to shoot from them towards the centre of his right eye; these may persist as long as thirty minutes, and appear whether his eyes are closed or open. In these attacks he feels strange, as if he were going out of his mind, and after them he has considerable headache.

He was examined in May, 1919, seven months after the infliction of the wound.

The wound was represented by a small circular trephine opening immediately to the left of the middle line of the skull, with its centre slightly above the lambda—that is, 8 cm. above the inion. Radiographs revealed an irregular piece of metal in the brain; in antero-posterior views it was seen slightly to the left of the middle line, and when measured on lateral stereoscopic plates it was localized in the antero-inferior part of the left cuneus, immediately posterior to the junction of the calcarine and parieto-occipital sulci.

His visual fields were repeatedly examined. He perceived a circular white object 10 mm. in diameter to the natural limits of his fields, but in the periphery of the lower right quadrants it was blurred, indistinct, and greyish, and often disappeared from vision for a moment, especially when it was not moved. It also seemed much smaller in this region, which extended to about 45 degrees from the fixation point. He could, however, distinguish the relative sizes of two objects presented to him in succession in this area as accurately as in homologous parts of his left fields, and recognize the shape of test objects, though the recognition was less certain. When an object 2 mm. in diameter was employed this amblyopic area was more extensive, especially near the vertical meridians. (Fig. 9.) The fields for red and green objects, 10 mm. in diameter, were approximately normal and equal in the right and left temporal fields; but when a large red object 30 mm. in diameter was used he failed to distinguish its colour, or saw it only as indefinite greyish-red, in the amblyopic area, though its colour was distinct out to 70 degrees in the lower left quadrants.

The radiographic localization of the missile in this case shows that it was in or near the anterior part of the area striata of the left hemisphere, and the occurrence of amblyopia in the periphery of the lower right quadrants suggests that this is the part of the visual cortex that is concerned with peripheral vision below the horizontal. Further, it was here that the visual spectra, which were undoubtedly due to discharges from the neighbourhood of the irritant lesion, always first appeared.

The missile was removed three weeks ago by Lieut.-Colonel P. Sargent. It was found on the left surface of the falx and probably lay in the anterior and inferior part of the cuneus. Since the operation he has had only one visual attack, which occurred on the second day after it.

Our observations so far indicate that the upper homonymous parts of each retina are projected on to the upper portion of the opposite visual area, and the lower halves of the retinae on to its lower. Further, all our facts go to prove that the centre for macular or central vision lies posteriorly in the visual cortex, while that for peripheral vision is situated anteriorly in it. The representation of the intermediate zones of the visual fields from the fixation point outwards are probably arranged in this order from behind forwards in the visual cortex.

There are numerous observations, however, which make it probable that a further localization is possible within the visual cortex. It is, for instance, not uncommon to find blindness in the homonymous visual fields limited to areas in the region of the vertical meridians. In most of these cases that I have seen this loss was associated with hemianopia, or at least a large area of blindness, in the opposite halves of the fields, and the injuries that produced them were penetrating wounds of one occipital lobe, which probably caused a superficial damage on the mesial surface of the other hemisphere. The following case is an example of this condition.

CASE X.

Pte. H. was wounded in September, 1918; he stated that he was unconscious for several days. At the operation, which was performed on the day of the wound, a depressed fracture was found in the left occipital bone a short distance above the lateral sinus, and several fragments of depressed bone were removed from a deep track in the brain. I examined him six months after the infliction of the injury.

The wound was represented by a circular trephine opening immediately to the left of the middle line of the skull, with its centre 4 cm. above the inion. No foreign bodies or retained missiles were visible in radiographic plates.

His central vision was $\frac{6}{6}$ in each eye, and he believed as good as it had ever been; but he had an absolute right homonymous hemianopia, which came exactly to the fixation point. He was also completely blind in the mesial portions of the left lower quadrants, except in a small area within 3 degrees of the fixation point. This blind area lay approximately between the inferior vertical meridians and the radii at 45 degrees from them. (Fig. 10.) Vision to both white and colours was unimpaired in the remaining portions of the left halves of the fields.

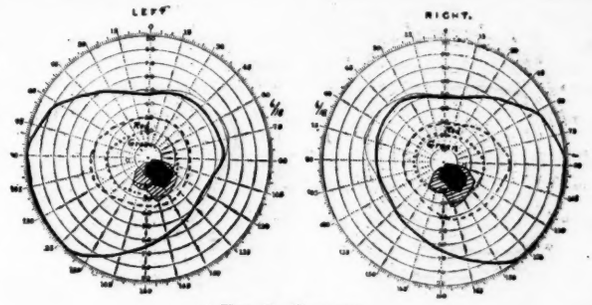


FIG. 7.—Case VII.

In this case the right-sided hemianopia was obviously due to the deep penetrating wound of the left occipital lobe. The loss of sight in the left halves of the fields shows that the right visual cortex also must have suffered, and the position and the nature of the wound makes it probable that the damage to the mesial surface of this hemisphere was superficial and probably limited to the surface of the cuneus. That portion of the area striata that lines the walls and the floor of the calcarine sulcus, and consequently lies further lateralwards, probably escaped injury.

I have seen many cases in which superficial injuries of the mesial aspect of the one hemisphere were associated with blindness along the vertical meridians of the visual fields. This suggests that the part of the area striata which is exposed on the surface of the hemispheres is concerned with vision in the neighbourhood of the vertical meridians, while the visual cortex that lies more laterally in the walls and the floor of the fissures is that which subserves vision along the horizontal radii. Wilbrand and Henschen's celebrated case, in which a narrow homonymous scotoma that extended from the fixation point horizontally outwards to 60 deg. was associated with a softening of the floor of the fissure, is complementary evidence of this hypothesis. I have not seen such a scotoma produced by a war wound, but this is not surprising, as any missile which penetrated the brain to the bottom of the calcarine fissure would necessarily injure the fibres of the optic radiations that pass to other parts of the visual cortex, and consequently produce more extensive blindness.

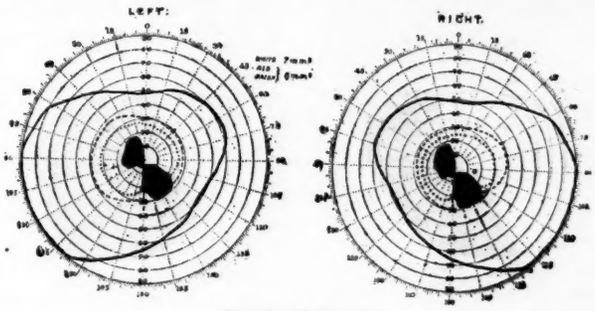


FIG. 8.—Case VIII.

Such observations as these, which are only selected illustrations from a large number of cases, indicate that there is a definite areal representation of the retinae in the visual cortex. There can be little doubt, too, of the general principles of this localization; the macular regions are represented posteriorly and the periphery of the retinae more anteriorly in the occipital lobes, while the upper and lower portions of the retinae are projected on to the corresponding parts of the visual cortex. Further, the mesial horizontal segments of the retinae are probably projected in the neighbourhood of the floors of the calcarine fissures.

And not only is each segment of the retinae represented in a definite portion of the visual cortex, but this representation is fixed and immutable, so that if a part of the visual cortex be totally destroyed there will be a permanent blindness of the corresponding segment of the visual fields. Only so can we explain the persistence of such a small scotoma as in Case v, which, when examined three and a half years after the infliction of the wound, was found almost identical in size and position as within the first few days of the injury. In Case III, too, the blind area remained unaltered between one and ten months after the injury. There is no place here for the theory of vicarious representation of the function of parts destroyed by other regions of the brain.

It is true that the functional loss observed immediately or shortly after the infliction of the wound is generally considerably greater than the permanent blindness, but this can be only expected since, in addition to destruction of a portion of the brain, gunshot injuries produce less severe damage with temporary loss of function in a zone around it. Hine has studied the early recovery of this temporary functional loss and the rules that govern it, and I have had many opportunities of observing it too. It is, however, the rule, as far as the visual cortex is concerned, that this temporary blindness or amblyopia disappears within a few weeks and leaves only the permanent defect, provided that there is no sepsis, inflammation, or hernia formation. For this reason observations made within a few weeks of the infliction of the wound can be utilized in the problem of visual localization. That sight may later return in portions of an area that was at first blind is no valid argument against the employment of such cases in the problem of the cortical localization of vision, for any scheme of localization that is true must explain the form and distribution of these temporary changes as well as the permanent loss of function.

Escape of the Macula in Vascular Lesions.

There are other questions that must be considered shortly. The homonymous hemianopia that is produced by a penetrating gunshot wound of one occipital lobe differs from the ordinary form of hemianopia due to vascular lesions that is met with in civil practice. In the latter the blindness rarely reaches up to the fixation point; as a rule there is a zone of normal vision to about 3 degrees to 8 degrees wide around it. This escape of central vision has excited considerable controversy. The one school explained it by the hypothesis that the maculae are not represented in the occipital visual areas, but elsewhere in the brain. But not only has no case, as far as I am aware, of macular blindness due to disease of this hypothetical centre been recorded, but all the observations on visual disturbances due to local wounds of the brain that have been made during the war are directly opposed to it. A second explanation was that there is a bilateral representation of maculae, that as each macula is represented in both hemispheres of the brain a unilateral lesion cannot abolish or disturb central vision. This hypothesis, too, is untenable, as when hemianopia is due to traumatic destruction of one occipital lobe the blindness usually extends to the fixation point, and the more accurate the methods of investigation, the smaller is the apparent escape. (My observations were made on screens placed one or two metres from the patient, and the margin of error was consequently small.) The same is true with regard to paracentral scotomata; when the most posterior region of the area striata is destroyed the blindness comes, as a rule, immediately to the fixation point. The probable explanation of macular escape in hemianopia due to vascular lesions is to be found, as Lister and I suggested more than three years ago, in the anatomical arrangement of the arteries that supply the occipital poles. Here, in the region of the posterior end of the striate areas, where the centre of macular vision is placed, the middle and posterior cerebral arteries meet, and if the circulation in the branches of the one is blocked

by an embolism or thrombus the portion of the brain in this watershed area may obtain arterial blood from the branches of the other, since there is always a certain amount of overlap. The cerebral softening due to the occlusion of an artery is rarely as extensive as its anatomical distribution. This explanation not only disposes of the difficulty of the macular escape, but is confirmatory evidence of the localization of central vision.

Loss of Colour Vision.

The second question we must consider is what elements of vision are represented in the area striata, which we assume to be its cortical centre. We may here deal particularly with the question of colour vision. In the cases I have selected to illustrate my arguments, the loss of vision was complete in the portions of the fields that were coloured black; here there was total loss of all visual perception. But in a few cases, as in Case IX, there was only amblyopia or diminution of sight, and in others, as in Case VI, a zone of diminished vision surrounded a patch of complete blindness. Areas of amblyopia are in fact very common.

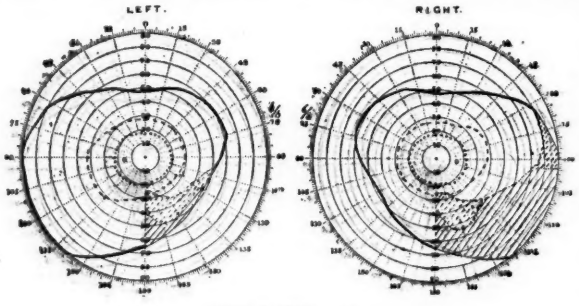


FIG. 9.—Case IX.

In these amblyopic areas the state of vision varies considerably. If the disturbance is severe only large white objects when moving may be recognized, but they appear "dim and misty," or "dirty and grey" instead of white, and the patient has no clear idea of their outline or size. When they cease to move he sees them no longer; they disappear. Smaller white objects may not be visible within this area or in some part of it; in fact the blind area generally varies indirectly in extent with the size and brightness of the object by which it is mapped out. In such areas colour cannot be perceived.

When the affection is less intense, white objects of moderate size can be seen even when at rest, though they appear indistinct and greyish, but small test objects may disappear momentarily from vision. The patient frequently states, too, that the objects presented to him seem smaller than they do in normal parts of his fields; but we have not here a specific loss of the appreciation of visible size, since the patient has always an idea of the magnitude of the object, if he can see it, and I have always found that he can distinguish the relative sizes of two test objects presented in succession almost as accurately as in homologous normal parts. The dimness and indistinctness of the visual image cause him to judge the object to be smaller than it is; he misinterprets the defective perception as smallness. In these cases colour perception is generally lost, too, or only relatively large areas of red and green can be recognized; but then their tints are usually pale and indefinite.

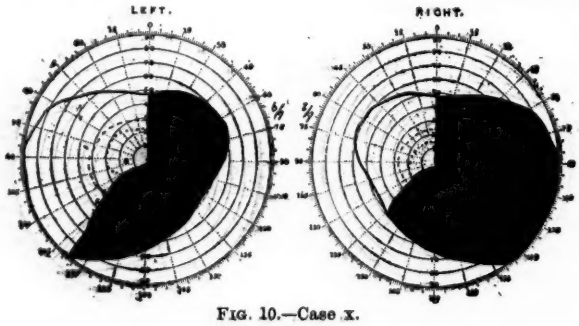


FIG. 10.—Case X.

Finally, in the mildest degrees of amblyopia even small white objects can be perceived, whether in motion or at rest, though they usually seem dim; and red and green—the only colours that I have systematically used—do not appear in their natural tones; a deep red is often "yellowish red," and green "pale or greyish."

I have seen no case in which colour vision was lost in portions of the fields in which the perception of white was unaffected, and I know of no conclusive evidence that a purely isolated loss of colour vision ever results from lesions of the mesial surfaces of the hemispheres in the region of the visuo-sensory cortex.

EFFECT OF BLIND AREAS IN DAILY LIFE.

We may now consider how these large or smaller areas of blindness affect the subject. We know from ordinary clinical experience that a man with homonymous hemianopia is frequently unaware that he has lost one half his seeing field, and that he learns to appreciate it only by experience. And the same is, as a rule, true with respect to blindness produced by traumatic cortical lesions. A man with complete hemianopia rarely complains spontaneously, when he is first examined, that he cannot see to the one side, and there is, as a rule, no subjective blackness or mistiness to this side unless central vision be affected; this part of visual space simply does not exist for him. And this holds true, too, for small patches of blindness to one side of the fixation point. A man with a left paracentral scotoma which extended to the fixation point constantly jolted into people who passed on his left side in the street; his consciousness seemed to be so little aware of his blindness that he rarely took precautions to avoid accidents which might occur through it. Even more striking is the effect of a small paracentral scotoma limited to either the upper or to the lower quadrants. Case IV, for instance, saw only the feet or legs of a person approaching on his left side, and connected this part with the idea of a whole man only by a deliberate act of attention. Similarly in reading he and many others missed small words and letters, and Case V failed to include the left-sided figures in the column he was adding; even after long experience he continued to miss them. These patients fail to realize their own blindness; the space not seen is simply space that does not exist for them, and they are no more conscious of its absence than is the normal person of his own blind spot. When, however, central vision is affected, so that the object on which the eyes are directed cannot be seen distinctly, the patients generally complain of a mistiness of vision, or of a blackness in front of their eyes when the blindness is here complete, though on careful questioning it is generally found that this is not a positive sensation of blackness but a state of not-seeing.

Positive Visual Phenomena.

Positive subjective visual phenomena are not uncommon during the first few weeks after the infliction of the wound. The most common form is the appearance of flashing lights or stars, which may be either white or coloured, in a part of the blind or amblyopic area. It is rarer that these subjective phenomena occur at a later period; Case IX, which is recorded here, is an example. In another man the local epileptiform seizures with which he suffered always began with the appearance of lights of all colours on the margin of an area of peripheral blindness, which grew brighter and brighter until they became intolerable as he lost consciousness; he exteriorized these centrally produced sensations so vividly that on one occasion he assaulted an orderly who stood beside him "for flashing those awful lights into my eyes." In a third case, brilliantly coloured stars appeared on the margin of a paracentral scotoma. Incidentally, the occurrence of colours in these sensations produced by discharging lesions in the calcarine region is an argument that colour perception depends on this portion of the brain.

In a second type of these visual sensations of central origin more complex figures appear in the blind area. These, which are more or less constant and do not move, are always extemely indefinite; a few men complained that there always seemed to be "a man or something" standing on their blind side, and one man with inferior horizontal hemianopia stated that when he tried to read there seemed to be a white hen on the lower part of the left page of the book. But when questioned these patients

admitted that they could never recognize a shape, there was only a "feeling that there was something there," something too ill defined to describe. These indefinite forms appeared only in the early stages and generally in blind areas that were recovering. They are probably due to the misinterpretation of feeble and indefinite sensations excited in functionally depressed areas of the visual cortex.

A CASE OF SYMMETRICAL GANGRENE (RAYNAUD'S DISEASE).

BY

EDWIN GOODALL, M.D.Lond., B.S., F.R.C.P.,

Temp. Lieut.-Colonel R.A.M.C.,

Officer-in-Charge Welsh Metropolitan War Hospital (Cardiff City Mental Hospital).

The patient whose case is here related was admitted on May 22nd, 1919, to the Welsh Metropolitan War Hospital from the Bath War Hospital with a diagnosis of subacute mania, possibly general paralysis of the insane. It was reported that the pupils were unequal and sluggish, that there were facial and lingual tremors, and greasiness of the skin of the face. The duration of the mental attack was given as four days.

History.

Patient was 42 years of age. The information supplied by his wife showed nothing of note in respect of family or personal history. His present illness was said to have supervened after five years' military service. The following are extracts from the medical case-sheet received on admission of the patient to this hospital, the medical notes having been taken whilst at a hospital in Cairo:

Admitted on March 26th, 1919, suffering from bronchitis, bronchopneumonia, and Raynaud's disease. Arterio-sclerosis noted, also patches of bronchopneumonia in both lungs, with pleuritic rub below right breast.

On April 11th diarrhoea, with blood and mucus in evacuations; no protozoa; no history of dysentery; urine alkaline, albumin present with phosphates.

On April 17th gangrene threatening the right foot, which is cold and blue; pain, with loss of sensation. Urine, occasional trace of albumin, no casts, no sugar.

On April 18th left foot bluish, right foot improved; little and fourth toes very purple, tender.

On April 20th gangrene threatening both hands, more in right; blue and cold, numb, painful.

On April 21st hands look like Raynaud's disease. Feet almost recovered.

On April 28th hands a little better; fingers still black.

On April 30th feet practically recovered, but little toe of right foot still bluish; fingers improving; still black, numb, and cold.

The patient was stated to have had malaria, but no data were given.

On admission to this hospital it was noted that he showed general wasting: the radial arteries were somewhat thickened; the temporals were not evident. No abnormality of heart; tremor of hands and tongue, and unsteadiness of gait; speech normal; pupils equal, react normally to light and accommodation; knee-jerks brisk; superficial reflexes normal. Systolic blood pressure 152, diastolic 130.

The blood was examined on May 29th and June 17th, with the following result:

Red blood corpuscles 4,933,333 and 5,360,000 to the c.mm.; white blood corpuscles 7,383 and 13,750; haemoglobin percentage, 85 and 95; colour index, 0.87 and 0.95; relative white cell count shows: large lymphocytes 48.5 per cent.; small ditto 6.0 per cent.; neutrophiles 43.5 per cent. On the second occasion these figures were, 34.5, 18.0; 46.25 per cent. (lymphocytosis). No other peculiarities.

The urine was examined on three occasions—

May 27th: Specific gravity 1026, acid, no sugar, no albumin.
May 30th: Specific gravity 1024, acid, no sugar, no albumin.
June 26th: Specific gravity 1016, slightly alkaline, no sugar, no albumin.

The "Wassermann" reaction, for which I am indebted to Captain H. A. Scholberg, R.A.M.C.(T.), was negative in serum and in cerebro-spinal fluid. Cells in cerebro-spinal fluid 2 to the c.mm. Nitrogen in 1 c.cm. of cerebro-spinal fluid (Stanford's method; for this estimate I am indebted to Dr. R. V. Stanford, research chemist at this hospital) 14.5 hundredths of a milligram.

Although the patient was restless, garrulous, excited and grandiose, he was not, according to the above laboratory findings, a general paralytic. The photographs sufficiently indicate the state of the fingers. The dark portions were gangrenous—black, dry, and insensitive; the nails were still preserved on each finger. The skin of the fingers above the gangrenous portions was reddish-blue, tense, shiny and sensitive to touch; the gangrenous portions, although insensitive to light touch, were sensitive to pin-prick and to deep pressure. The hands generally were somewhat livid; toes, nose, and ears not affected.

On June 30th, the date of writing this report, the patient appears to be almost well from what was presumably an attack of subacute mania. There are no physical indications of general paralysis. It is noted, however, that both pupils are slightly excentric, and there is greasiness of the facial skin. Systolic blood pressure 148, diastolic blood pressure 128; mummification of affected finger-tips; line of demarcation between living and dead portions very obvious.

Raynaud, in his original thesis, published in 1862, states that, out of 25 cases of symmetrical gangrene seen by him, 20 occurred in women and 5 in men; the patients were all under 30, excepting one aged 48. Oppenheim[1] describes the disease as developing exclusively or principally on the basis of the "neuropathic diathesis." Amongst exciting causes, emotional disturbances—fear, etc.—take first place. Sometimes the condition has been preceded by infectious disease—typhoid, influenza. Young women up to 30 years of age are the usual victims, but of the 4 cases which Oppenheim had seen 3 were men. Photographs of the condition given in Oppenheim's work are almost identical with those accompanying the present description. In Raynaud's Plate 1, showing the toes of two feet affected by symmetrical gangrene, the condition is much less advanced than in the case here recorded. For the photographs accompanying these notes I am indebted to Dr. Stanford.

There is no question in this case of ergotism. The bread eaten by this patient whilst in Egypt was the same as that issued to the troops in general. I do not recollect a single instance of this disease amongst the cases of mental disorder seen by me, whether in public institutions or consulting practice, during my twenty-nine years' experience.

I desire to take this opportunity to draw attention to the micro-quantitative methods of estimating the constituents of cerebro-spinal fluid devised by Dr. R. V. Stanford. That for nitrogen is described in the *Zeitschrift für Physiologische Chemie* (Bd. 86, H. 3, of 1913). Details of the results in a large number of cases are given in that paper, and a great many more have been dealt with since. The conclusions are summarized as follows in a memorandum kindly supplied to me by Stanford:

The number of hundredths of a milligram of total nitrogen contained in 1 c.cm. of the cerebro-spinal fluid of a patient is called the "nitrogen number" (NN). In the normal sane individual the nitrogen number is about 15. In the great majority of insane patients, not suffering from general paralysis or gross brain lesion, the NN is between 15 and 20. In a few cases it was found to be higher, but in only one case above 25. In cases of general paralysis the nitrogen number is nearly

always above 20, and generally about 30 or more. In a small percentage of cases a nitrogen number below 20 was found, but the patients were either in a remission or in what may be called a stationary state. In such cases a second puncture after an interval of time would probably settle the diagnosis (compare Table I, bis, loc. cit.). Details are given in the paper cited, where will also be found the figures relating to a patient who was examined when in remission, and subsequently, when the disease had resumed its course, the nitrogen number varied accordingly.

One other exception must be pointed out. The wasted brain of the senile dement is well known *post mortem*. Corresponding with this, it is found that patients who have been insane for a long period, especially if of advanced years, have high nitrogen numbers. Such cases would, however, never be confused with cases of general paralysis. Regarded as an aid to diagnosis in general paralysis, the nitrogen number is very much more reliable than any means hitherto proposed, but in the present state of the investigation of the subject it must be taken in conjunction with the clinical observations.

The above reference to Stanford's method is made with a view to promoting its use as a routine procedure in diagnosis, in cases of organic and functional disease, as seen in neurological and psychiatric practice.

REFERENCE.

[1] *Lehrbuch der Nervenkrankheiten.*

THE EFFECTS OF A SCORBUTIC DIET ON THE ADRENAL GLANDS.*

BY

ROBERT McCARRISON, M.D., D.Sc., F.R.C.P.,

BREVET LIEUTENANT-COLONEL I.M.S.

(From the Pasteur Institute of S. India, Coonoor.)

THE effects of a scorbutic diet on the adrenal glands have been studied in guinea-pigs fed on a dietary of crushed oats and autoclaved milk. The naked-eye changes consist in enlargement of the adrenals with increase in their weight and in congestion.

The weight of the adrenals of guinea-pigs dying in consequence of the scorbutic diet is approximately double that of health. Whereas the gross weight of both organs in healthy guinea-pigs ranged between 0.390 and 0.520, with an average weight of 0.467 gram, in guinea-pigs fed on the scorbutic dietary the weight of both glands ranged between 0.850 and 1.150 grams, with an average weight of 0.955 gram. The increase in weight due to the scorbutic diet is even more marked when the weight of the glands is calculated per kilo of *original* and of *final* body-weight.

The histo-pathological changes are haemorrhagic infiltration and disintegration of the cellular elements of the cortex and medulla. These changes occur in animals which may exhibit no clinical evidences of scurvy during life. They are to be regarded as pre-scorbutic in character. The areas of haemorrhagic infiltration are circumscribed, and are situated around the periphery of the adrenal cortex.

The adrenalin content of the suprarenals of guinea-pigs fed on a scorbutic dietary was estimated in five animals by the method of Folin, Cannon, and Dennis. One gland was used for this estimation and the other for histological study. In some cases the right and in others the left gland was used for the estimation. There is no evidence that the organ on one side is more affected than that on the other. On the presumption that each was affected to a like degree the total adrenalin content of both adrenals was calculated from the results obtained with one gland.

It was found that in spite of the fact that the weight of the organs is more than twice as great, the total quantity of adrenalin in the two glands in guinea-pigs fed on a scorbutic diet is less than half that present in healthy guinea-pigs. Similarly the total adrenalin per kilo of *original* body-weight (that is, the weight of the animal before the experiment commenced) is little more than half that of health. When calculated against the *final* body-weight of the guinea-pig the total adrenalin per kilo of body-weight is found to be less markedly reduced—that is to say, the total adrenalin production does not diminish in proportion to the diminution of body-weight. The total adrenalin per gram of gland is less than one-fourth of that found in health. In one guinea-pig in which a coliform organism was cultivated from the heart's blood at autopsy, the adrenalin content was considerably less than in the other four animals in which no infection was detected by aërobic methods of culture.

A pronounced reduction in the amount of adrenalin in the suprarenal glands is thus found to result in guinea-pigs from a scorbutic dietary of crushed oats and autoclaved milk.

It is of interest to direct attention to the fact that the total adrenalin per gram of gland in healthy pigeons is approximately ten times greater (0.0023 gram) than in healthy guinea-pigs (0.00023 gram). This greater proportion may bear some relation to the fact that uric acid is excreted as such in aves. A further point of interest in connexion with these results in guinea-pigs is the contrast they afford to the great increase in the adrenalin content of the adrenal glands which occurs in pigeons wholly deprived of accessory food factors of all classes. I have found that the adrenalin content of these organs in aves is largely dependent on the class of accessory food factor which is absent from the dietary. When, for example, fresh butter, which contains accessory food factors of the "A" class, is added to a dietary of autoclaved rice, the adrenal glands of pigeons so fed do not, as a rule, contain an amount of adrenalin out of proportion to that found in health; exceptions occur in approximately 10 per cent. of all pigeons so fed. Nevertheless, the evidence so far available, both in birds and mammals, points to the dependence of the functional perfection of the adrenal glands on the adequate provision in the food of accessory food factors of all classes. It appears that lack of factors of the "A" class with excessive production of adrenalin is associated with the occurrence of oedema in aves, and that in guinea-pigs lack of factors of the "C" class, with diminished production of adrenalin, is associated with haemorrhage into the body tissues.

* Abstract of a paper appearing in the July number of the *Indian Journal of Medical Research*. Abstracts of previous papers on the Pathogenesis of Deficiency Disease were published in the BRITISH MEDICAL JOURNAL on February 15th, 1919, p. 177, and on July 12th last, p. 36.

SUDDEN DETACHMENT OF AORTIC INTIMA (SO-CALLED DISSECTING ANEURYSM).

BY

CRANSTON WALKER, M.D., B.Sc.,

PATHOLOGIST, BIRMINGHAM GENERAL HOSPITAL, ETC.,

AND

LENA WALKER, M.D., CH.B.

THE clinical events in the following case may be attributed to the stripping of the aortic intima. From the history of a very sudden onset, without any previous warnings, it may be assumed that the intima began to strip suddenly, that it gave rise to severe shock, and to pain which was referred rather vaguely. The condition of the left leg was probably due to a portion of the loose intima happening to occlude, completely or partially, one of the main arteries to the limb and so shutting off too much blood supply for full muscular metabolism to be carried on; later, collateral channels would be opened up.

As the shock from this stripping nearly killed the patient before his admission, it may be surmised that his sudden death after admission was due to the onset of a second stripping, although two such events could not be traced *post mortem*.

Clinical History.

The patient was a large, well built, muscular man of 65, a plasterer, a steady and respected workman and apparently of temperate habits. He had had no recognized illness since childhood, and was believed by himself and his neighbours to be in hearty good health up to the moment of his sudden seizure.

At 10.30 a.m., after no particular exertion or excitement, he fell to the ground without warning. It is uncertain whether he lost consciousness—bystanders described the occurrence as a "fit"—but within a few minutes he was seen to be conscious and a little later complained of pain in the chest and said that he had lost the use of his left leg.

He was admitted to the General Hospital, Birmingham, about three-quarters of an hour after the event. He was fully conscious, but distracted by abnormal sensations. He complained chiefly of pain and loss of use in the left leg, and also of pain under the sternum; but his chief cause of distress appeared to be some oppressive sensation or conviction for which no words came handy. He felt certain he was about to die. He was restless and pallid, the skin surface was rather cool, the respirations were irregular, rather rapid, and frequently deepened voluntarily. Thus far his aspect was like that of a man suffering from a severe haemorrhage and from pain.

Examination did not reveal any paresis of the face or upper extremities. The pupils were rather large and reacted to light and accommodation. The patient could move his left leg, but with deficient force; the paresis appeared to affect the whole limb indifferently; there were no movements or groups of muscles specially affected; the knee-jerks were normal; the plantar reflexes were not elicited.

The cardiac impulse could not be felt. To percussion, the left ventricle was slightly enlarged. The heart sounds were very faint, but otherwise not abnormal. The heart rate was increased and diastole was somewhat shortened, but there was no other disturbance of rhythm. The pulse was rapid, exceedingly small, and of such a character as to cause immediate anxiety as to life. The radial arteries were somewhat thickened. On further examination of the chest nothing of importance was found. The urine, withdrawn by catheter, was pale (specific gravity 1008), and showed a faint trace of albumin on boiling. Two or three hyaline casts were found on centrifuging.

After removal to the ward the patient was much collapsed, and complained of extreme substernal pain. The arterial blood pressure, systolic, was found to be 180 mm. Hg.

The patient was given, with great caution, inhalations of amyl nitrite and small doses of sodium nitrite by the mouth, treatment being controlled by frequent measurements of the arterial blood pressure, which was not allowed to fall below 150 mm. Hg. There was no sudden relief of pain, but after an hour or two the patient felt much better, and there was some return of power in the left leg. He was allowed small quantities of warm fluids.

He passed a fairly comfortable night, and next day appeared considerably better; the leg paresis was further diminished. There was no change in the physical signs, except an improvement in the heart beat; no further chest signs developed. Early in the evening he died suddenly while making a slight exertion.

Post-mortem Examination.

The body was that of a well-nourished man, appearing even after death younger than his years.

The pericardium contained two or three ounces of blood-stained fluid; the heart showed hypertrophy of the left ventricle, and interstitial fibrosis; the coronary arteries were somewhat atheromatous. The aortic arch as seen *in situ* was enormously distended, irregular in outline, mottled and dusky in colour.

The heart, pericardium, and the whole of the aorta with the iliac arteries and femorals as far as the apices of Scarpa's triangles were removed entire and then laid open.

On the posterior aspect of the ascending aorta was a pouch-like dilatation about the size of a small Tangerine orange, not unlike a diverticulum, but with a less definite ring. It was limited by the aortic valve-ring below, but extended above to the innominate artery. The descending aorta and main branches showed an even contour; the media and externa, firmly sclerosed, maintained the rotundity of the vessels.

The lumina of the dilated ascending aorta, of the remainder of the aorta, and of both iliac and femoral arteries were filled by recent loose *post-mortem* clot and by what appeared to be calcareous débris; there were no *ante-mortem* clots. On carefully washing away the blood the apparent débris was found to be the compressed and sheath-like intimal coat, which in some places was wholly detached from the media, in others was adherent by means of a few fibrous tags, and in other parts again was normally attached.

A high degree of fibrosis was present throughout all the coats of the arteries concerned. The intima was the seat of severe atheromatous disease. It was studded with plaques of all sizes and thicknesses; some were an eighth of an inch in depth, many were extensively calcified, and others were undergoing central necrosis. The intima was perforated in several places by these atheromatous "ulcers"; the highest perforation was about an inch above the aortic valves; here the intima was very brittle, and there was an irregular tear which appeared to start in an atheromatous hole. On the cardiac side of the tear the intima was just separated from the media as far as the valve ring; the stain of blood in the pericardium may have oozed through the interstices of the intrapericardial outer coats. Distal to the tear the intima was lying entirely to one side of the distended pouch.

In the thoracic aorta the intima in part retained its lumen, but in the abdominal aorta and iliac arteries the intima was for the most part crumpled up against one side. For considerable stretches the blood must have passed through the aorta chiefly outside the intima, but it was impossible to decide which were the patent channels and where had been the strongest currents.

The other vessels and organs showed diffuse sclerosis in excess of the amount usually present at the age of the subject. There was marked chronic interstitial nephritis.

How can Intimal Stripping or Dissecting Aneurysm be Brought About?

An anatomical condition similar to that found in the present case is described in nearly every textbook of pathology and of surgery under the heading of dissecting aneurysm, and the impression is given that the spectacle is very familiar. In some 2,500 *post-mortem* examinations we have not met with a similar case. A search through the literature shows that, although references to over a hundred cases can be found, the condition is very rare. The so-called dissecting aneurysm is encountered more frequently in museums than in practice, and far more frequently still in textbooks.

The production of dissecting aneurysm has not been explained quite satisfactorily. Nearly all accounts agree that profound atheromatous disease is a necessary precursor. Next, a breach in the intima is required, and this may take place in three ways: A patch of atheroma may enlarge and destroy the wall of a vas vasorum; or it may involve the intima of the main vessel, become pultaceous in the centre, and break down to form a so-called atheromatous "ulcer"; or the intima may split. Splits of the intima have been figured several times,[3] and have been described, especially by Peacock.[4] As a rule they run transversely, and may complete the circuit of the aorta; they have clean-cut edges as though made with a razor, and are nearly straight. They are most commonly situated in the ascending aorta or first part of the arch, but may occur elsewhere. Probably these splits occur on longitudinal stretching of the aorta when the intima has become relatively rigid and brittle—that is to say, when its deformation per stress is reduced, and when relatively small deformation produces rupture.

At this point some authors[1] distinguish between dissecting aneurysm and intramural haematoma. The latter occurs when the blood slowly infiltrates the pultaceous matter of connected patches of atheroma and may in time replace it; the process is gradual, and cannot be the immediate cause of sudden clinical disasters.

The "dissecting aneurysm proper" is often supposed to start as a bursting of the intima into a weakened atheromatous patch, and is generally described as a forcible burrowing of the blood from some breach in the intima between the layers of the media, the motive force being the blood pressure. In our case the blood lay in most places just outside the internal elastic lamina, it might be described as between intima and media or between inner layers of the media. The situation appears to be the same in the majority of previously recorded cases.

The mode of production, however, requires narrower scrutiny. The fact that breaches in the aortic intima, due to cracks in atheromatous plates or occurring in atheromatous "ulcers," are far commoner than dissecting aneurysms shows that a gap in the intima is insufficient explanation of its being stripped from the media. The matter can be made clear by physical considerations.

The pressure of the blood outwards is balanced by the sum of the pressures of the arterial coats inwards. (For the purposes of this argument the variations of pressure can be neglected.) Of these coats, the normal intima contributes little, owing to its tenuity; an atheromatous and more rigid intima may contribute much more inward pressure. If the intima is breached, at that spot the outer coats alone must exert inwards a pressure equal to that of the blood outwards; if their physical condition is such that they do so with only little stretching, no harm results; but if the outer coats stretch much, before their inward pressure balances that of the blood, then an ordinary saccular aneurysm develops. A normal intima being thin, pliant, and attached to the media, would stretch with it, but a rigid atheromatous intima would not; it would either hold the media *in situ* at the edges of the gap, or, if the quantitative difference between the pressure of the blood and that of the outer coats became sufficient, the media would tear from the intima; the latter might remain intact *in situ*, or might be more or less broken during the tearing. Detachment of the intima is therefore comprehensible where there is atheroma and bulging of the outer coats.

But in many cases, and in our case beyond the aortic arch, the intima has been detached without any bulging of the outer coats, so that no abnormality has been suspected until the aorta was opened up. In such cases, contrary to the implication of textbooks, it is physically impossible for the pressure of the blood to cause detachment of the intima. For, granting a gap in the intima, granting even a commencement of stripping caused by some other means, for the pressure to continue the stripping it would have to bulge the intima inwards, against the pressure of the blood in the lumen; the blood outside the intima may be at a lower pressure, but cannot

be at a higher pressure than the blood in the lumen. When a portion of intima is already detached, the blood is at the same pressure on each side of it, and it has no impulse to move at all.

Blood pressure may, as in the predescribed circumstances, strip the media from the intima, but cannot strip the intima from the media.

The production of aneurysms is generally considered statically, as a pressure problem. There is a dynamic factor at hand in the motion of the blood. The velocity of the blood in the aorta varies considerably, its maximum is about 120 cm. per second; at this instant each centimetre length of the blood column has about 6,000 ergs of kinetic energy, or, in gravitation measure, about 2 centimetre-grams. A nearer calculation is not worth while, as we do not know how much of the energy is available for coat-stripping. The total kinetic energy even at a maximum is not great, but the maxima recur some 4,000 times an hour, and a fraction of the energy in each is capable, in time, of producing appreciable mechanical results.

It may be surmised that if an intima were already extensively undermined and perforated by atheroma, detachment might be accelerated by the energy of the moving stream. If tags of intima were partially detached, they could be projected into the lumen as flaps, so directing more of the kinetic energy towards stripping. Finally, a flap might be thrown right across the lumen, causing a dam; then the whole of the kinetic energy would be diverted to intima stripping, and, as well, a powerful pressure factor would be called into play; the blood pressure below the flap and within the intima would rapidly fall towards zero, while the pressure above the flap and outside the stripped portion of intima would rapidly rise towards ventricular systolic pressure. Here, then, is a possibility of sudden and violent stripping of the aortic intima, supposing there to have been a previous partial undermining and detachment; the preparatory process may be very gradual and insidious.

SUMMARY.

1. A man of 65, apparently in good health, fell down suddenly and nearly died; he recovered somewhat, and complained of intense substernal pain and of pain and paresis of the left leg. About thirty-eight hours later he died suddenly.

2. The *post-mortem* examination disclosed the greater part of the aortic intima lying free in the lumen. The aorta was extensively atheromatous.

3. The mechanism of the process, and of the so-called dissecting aneurysm, is discussed. It is maintained that, in the absence of bulging of the outer coats, static considerations alone do not provide an adequate explanation, but that the motion of the blood is a significant factor.

REFERENCES.

[1] Benda: Article "Die Gefässe" in Aschoff's *Patologische Anatomie*, vol. ii, Jena. [2] Boström: *Deutsche Arch. f. klin. Med.*, vol. xlii, pp. 1-43, 1887. [3] Osler: Articles, Aneurysm, in Allbutt's *System of Medicine* and in Osler and McCrae's *System of Medicine*. [4] Peacock: *Trans. Path. Soc. Lond.*, vol. xiv. 1863, and vol. xvii, 1866. [5] Schede: *Virch. Arch.*, vol. cxcii, pp. 52-85, 1908.

NOTES ON LIVER ABSCESS.

FOUNDED ON CASES AT A STATIONARY HOSPITAL, PALESTINE.

BY

C. GIBSON, M.B., B.S.LOND., F.R.C.S.EDIN.,

LATE TEMPORARY CAPTAIN R.A.M.C.

THIS paper deals only with aspects of the disease presented in five cases of liver abscess seen in this hospital between September 28th and November 2nd, 1918.

The site of the abscess had an important relation to the result in these cases. According to the position of the abscess the cases may be divided into epigastric and subdiaphragmatic.

A. EPIGASTRIC.

In Cases I, II, and III the abscess was epigastric, was diagnosed comparatively easily, and the result of operation was apparently successful, the patients being transferred by ambulance train to Kantara on the twentieth, fourteenth, and twenty-eighth day respectively after operation, and subsequently to Cairo and Alexandria.

In these cases the abscess was large and single. No second abscess was discovered at operation, nor were there suspicious signs or symptoms during the time the patients remained under observation.

In one case (II) the abscess was in the left lobe, and the liver was adherent to the abdominal wall over it. In two cases (I and III) the abscess was in the right lobe, and no adhesions were present between the visceral and parietal peritoneum. In Case III, free sero-sanguineous fluid was present in the peritoneal cavity at operation.

B. SUBDIAPHRAGMATIC.

In the remaining cases the abscess was closely subdiaphragmatic, diagnosis was rendered difficult by the presence of pneumonic signs, and was made certainly only at *post-mortem* examination. These cases are considered at length under differential diagnosis.

The accompanying synopsis of cases gives the history, symptoms, signs, bacteriological findings and results.

CASE I.

History of bacillary dysentery in June, 1918. Admitted September 28th, on the eleventh day of illness, with pain in the epigastric and right hypochondriac region, nausea, and constipation. Liver enlarged, four fingerbreadths below costal margin, with localized tenderness. General rhonchi present in lungs. Highest temperature 102.6°. The leucocyte count was 20,000. Three examinations of faeces showed large number of dead amoebae, variety doubtful, probably *A. histolytica*. Pus from abscess negative for amoebae.

Operation October 4th. Patient transferred on twentieth day after operation.

CASE II.

History of two attacks of diarrhoea, the first in August, 1918, with presence of mucus; the second on October 26th, at onset of illness, without blood or mucus. Admitted on November 2nd, on seventh day of illness, with pain in left epigastric and umbilical regions. The liver palpably enlarged and locally tender in the left epigastric region. Highest temperature 102°. General rhonchi present in lungs. The leucocyte count was 10,800. One faecal examination gave a negative result, but *A. histolytica* was present in pus from abscess.

Operation November 8th. Patient transferred on fourteenth day after operation.

CASE III.

History of two attacks of diarrhoea—the first in May, 1918, severe with presence of blood and mucus; the second in August, 1918, three days' diarrhoea without blood or mucus. Admitted October 19th (seventh day of illness) with severe pain, continuous with exacerbations in the right epigastric area. Liver enlarged to level of umbilicus in right mid-clavicular line. Liver tenderness present, but badly localized at first. Highest temperature 103.2°. General rhonchi present in lungs. Large quantity of muco-purulent sputum. He was much emaciated. The leucocyte count was 17,000. One examination of faeces was negative. Pus from the abscess was not examined.

Operation on October 28th. Patient transferred on twenty-eighth day after operation.

CASE IV.

No history of diarrhoea. Admitted on October 29th, third day of illness. History of abdominal pain, with vomiting at onset. Liver not enlarged downwards. Signs of pleurisy and consolidation at base of right lung, general rhonchi present in rest of lungs. Pain present in diaphragmatic region, in right mid-axillary line, and in right shoulder; tenderness present in same region, but not constant. Highest temperature 103°. One faecal examination was negative, but *A. histolytica* was found in pus from the abscess at *post-mortem* examination.

CASE V.

History of diarrhoea negative. History of pain in right hypochondrium off and on for one month. Pain more severe and accompanied by vomiting on November 12th. He was admitted on the eighth day, after severe pain. Liver not enlarged downwards; signs of consolidation present at base of right lung, and general rhonchi present over rest of lungs. Tenderness over right costal margin early, absent later. Two examinations of faeces negative. Two amoebic abscesses present on *post-mortem* examination on November 13th.

Admission to hospital in above notes signifies transfer from other hospital to the hospital referred to in particular.

Cases.	Operations.	Deaths.
Epigastric 3	3	0
Subdiaphragmatic 2	0	2

Diagnosis.

A history of diarrhoea or dysentery is of value when obtained, but a negative history may be given, as in Cases IV and V. In one case only did the patient state

that he had suffered from dysentery, and inquiry from the hospital at which he had been treated elicited the information that the diagnosis had been bacillary dysentery, for which he was treated, but that thirteen days previous to his discharge an immotile cell (? *Amoeba histolytica*) was seen on microscopic examination of the faeces.

Pain was present in all cases. A man with a large liver abscess has had severe pain during its formation.

Tenderness over some part of the hepatic area was present in all cases at some period of the illness, and was maximal over the site of the abscess.

Enlargement of liver was present in Cases I, II, and III, the firm edge being easily felt; it was not present in a downward direction in Cases IV and V, and was not observed in an upward direction, pneumonic signs being present at the right base on admission.

Pyrexia was swinging, possibly with less regularity than that due to other abscesses. There was slight jaundice in two cases. Sweating was pronounced in Case II and in Case IV, but only during the terminal collapse.

Bacteriological Findings.—The presence of *Amoeba histolytica* in the faeces is very valuable; but failure to find it is of very little value unless several examinations have been made. To obtain satisfactory results the specimens must be examined shortly after evacuation. In none of these cases was *A. histolytica* definitely found in the faeces. In one case (I) the presence of large quantities of dead amoebae, probably *A. histolytica*, was reported; in the other cases findings were negative. It will be noted that *A. histolytica* was present in the pus of the abscess in two cases.

Leucocytosis.—In Case II the leucocyte count was only 10,800, in spite of the presence of a large abscess. I am indebted to Captains R. T. Jones and J. W. Fox, R.A.M.C., of No. 1 Military Laboratory, for these results.

Differential Diagnosis.

I. The diagnosis from primary right basal pneumonia rests on the presence of some abdominal symptoms, swinging temperature, and tenderness over some part of the hepatic area, before any pulmonary signs are noted at the right base, showing clearly that the pathological condition at the right base is secondary to some condition causing these symptoms and signs—namely, liver abscess. Cases IV and V illustrate these points. They were admitted to hospital with right basal pulmonary signs at the time that epidemic pneumonia was prevalent, and their condition was attributed to this disease; but the pneumonic condition was secondary.

Case IV had abdominal pain, nausea, and vomited in the early stage of his illness. His tongue was very coated on admission, though the stools passed were normal in appearance.

Case V had general abdominal rigidity and tenderness and a dry coated tongue. He improved upon daily enemata, which caused the evacuation of scybalous masses. In neither of these cases was enlargement of the liver downwards found, and tenderness over some part of the hepatic area was a transient sign.

Among the patients with malaria who died of epidemic pneumonia and upon whom *post-mortem* examinations were made in the same period, the pneumonia was present at the right base in several, and the physical signs present were right basal pneumonia with an enlarged liver, in some cases showing slight general tenderness. The patient was already suffering from two clinical entities and it seemed unreasonable to expect that a third should be added. The possibility of liver abscess in these cases was considered and dismissed.

II. The diagnosis from malarial hepatitis depends on the presence of splenic enlargement. I saw one case only in which the diagnosis of amoebic hepatitis, probably with abscess, was definitely made, and, although the liver was enlarged, tenderness was neither marked nor localized, and a blood film, positive for malaria, cleared away any doubt. In none of the cases was the spleen enlarged.

Number of Abscesses.

As already stated, in those cases which came to operation one abscess only was found. On the other hand, in the cases which came to *post-mortem* examination, the abscesses were multiple. Recently I have seen a case in which two abscesses were drained at operation, one in the left epigastrium, the other in the body of the right lobe, drained by resection of the rib. In Case IV the abscess had burst into the pleural cavity. This patient had severe pain in the right shoulder. In Case V the abscess had burst into the peritoneal cavity.

In conclusion, I thank Lieut.-Colonel F. E. Roberts, D.S.O., R.A.M.C., for permission to publish these cases, and my colleagues at — Stationary Hospital for their help.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

ANOXAEMIA IN NASAL OBSTRUCTION.

To convince a patient that his troubles—which were many and "vague"—were due to intermittent blockage of his left nostril, I instituted a series of tests of which one was a walk of four miles. The first walk was carried through with the left nostril blocked; the second with the left nostril clear. The patient described his sensations thus: "The first walk my feet were as lead; in the second I felt they had wings."

Another test was that the patient walked four miles, and at intervals, regulated by the feeling of weight in his feet, he cleared his left nostril by pressing the nose to the left side. After his return he said, "I was surprised. When I pushed my nose to the left, and thus instantly gave free passage to air through my left nose, I found my pace of walking immediately increased enormously. I felt as if I had been shot from a gun."

I thought this statement interesting at the time—October, 1917. I think it of more interest now. In the British Medical Journal of July 19th, 1919, I read in Dr. Haldane's lecture:

> The senses become dulled without persons being aware of it, and if the anoxaemia is suddenly relieved by administration of oxygen or other means the correspondingly sudden increase in powers of vision and hearing is an intense surprise.

Presumably nasal obstruction must cause anoxaemia. What is true of the sensory powers must be true of the motor powers. My patient's word was "surprised."

Chas. J. Hill Aitken, M.D.,
Medical Officer in Charge Camps, B.T. in France.

DIAPHRAGMATIC HERNIA.

It may be interesting to record a case of diaphragmatic hernia I saw in India. I have not the exact data, but the sequence of events was as follows:

A private in the 1/10th Middlesex Regiment was admitted to Chakrata Hospital, Himalayas, suffering from acute abdominal pain with vomiting. He had been wounded in Mesopotamia in the left hypogastrium, and the exit wound was between the shoulder blades. Apparently treatment had been temporarily successful, and he was transferred to the hills, convalescent. He stated that he had eaten a large number of new walnuts, and considered this the sole cause of his trouble.

He was examined, and a diagnosis of probable diaphragmatic hernia made, as the left chest was tympanitic, and the patient was suffering severely from shock.

Arrangements were made for operation, and anti-shock measures were instituted, but he collapsed suddenly, and died almost immediately.

Post-mortem examination showed that the stomach had forced its way through a small hole in the diaphragm, and was lying in the left pleura. The organ was congested and full of gas, and had apparently become semi-strangulated.

It seems to me probable that the diaphragmatic hole was too small to interfere much with normal functions until the advent of gastric and intestinal irritation, which had produced strong peristalsis, and so helped to force part of the abdominal contents upwards. It may be the pressure was raised to a dangerous point by the continuous bending double of the patient, or again the hernia may have been the primary cause of the epigastric and hypogastric pain. Death, I think, was due to pressure on the heart causing syncope.

J. G. Bennett, M.C.,
Manchester. Late Captain R.A.M.C.

A VESICAL CALCULUS WITH MEMBRANOUS COVERING.

DURING the early part of the present year I had as a patient a young private soldier who had had stone in the bladder for four months. There was great frequency of micturition, with pain at the point of the penis as the bladder walls gradually pressed down towards the trigone. No blood was to be seen, except some corpuscles visible on microscopic examination. There was marked cystitis. On rectal examination no hard body could be felt, and a sound also gave a negative result. At the time *x* ray examination was not possible, and cystoscopic examination was likewise not available. Thus one had to judge for the most part by symptoms, examination, so far as it could be performed, not providing much help towards an accurate diagnosis.

Bladder lavage gave a certain amount of relief for a short time only, as also did internal medication. I performed suprapubic cystotomy, and removed a stone of a curious sort from the bladder. It was oblong, and nearly the size of a small hen's egg. It was soft and membranous on the outside, and the membranous covering could be moved freely on a hard underlying mass. The covering was rather friable. This softness explained the negative findings on examination with the sound. The bladder was very contracted, and its walls thick and inflamed.

On making a section of the calculus, which was obviously of a phosphatic nature with a small fairly hard central core, the outer membrane was found to be tri-laminar, composed apparently of mucoid material impregnated with phosphates. The specimen was shown to some other surgeons, who all said they had never seen a similarly constructed calculus.

The opening made in the bladder was closed, after removal of the calculus, and the space of Retzius drained by means of a wisp of gauze for a few days. The bladder was drained by a rubber catheter inserted through the urethra. This was removed on the eighth day. Urine was now passed normally and symptoms had disappeared. The abdominal wound, which had seemed to be closing well on removal of the gauze drain, now began to leak urine to a slight extent, and a catheter was reintroduced by the urethra for about a week. The wound healed well, and the patient was completely relieved of his symptoms, which had been very acute.

The case is of interest because of the unusual nature of the calculus, and because of the degree of difficulty in making an exact diagnosis in absence of aid from *x* rays and cystoscope.

A. E. CHISHOLM, F.R.C.S.Edin.,
Late Captain R.A.M.C.

THE CURE OF MULTIPLE WARTS ON THE FACE.

IN an interesting communication by Dr. Charles Ind, in the JOURNAL of July 5th, p. 11, mention is made of the failure of ionization with magnesium sulphate to cure small warts.

The cause of failure lies, I believe, in the omission of an important detail. Each wart must be superficially pricked with a fine needle before ionization. This can be done with great rapidity, and causes no discomfort, and with a current of 20 to 25 milliampères no complaint is made of anything beyond a slight pricking sensation. The warts show no change for from seven to nine days and then vanish. I have treated many cases, and have never seen a failure since I adopted this method.

Henley-on-Thames. W. LONGWORTH WAINWRIGHT.

ASPIRIN IDIOSYNCRASY.

IN the JOURNAL of July 12th Dr. Karunaratne records an interesting case of aspirin idiosyncrasy. It is a fact not sufficiently well known that a patient with a low blood pressure and nasal polypi cannot safely take aspirin. Even one grain may cause symptoms similar to those described by Dr. Karunaratne. Antipyrin and oxyquinothein cachets have a like effect, but phenacetin can, as a rule, be taken. Consequently there is great danger in giving aspirin indiscriminately in cases of asthma, especially as it is well known to give great relief in many cases. It is always risky if the patient has or has had nasal polypi, but if there is a high blood pressure unpleasant results are not likely to follow.

London, W. ALEXANDER FRANCIS.

Reviews.

THE FUTURE OF MEDICINE.

IT is not often that a book appears like Sir JAMES MACKENZIE'S *Future of Medicine*.[1] Every thoughtful medical man should read it, not only for its professional instruction, but in order to test his mental elasticity and power of fair judgement, to see if he can weigh without bias an unacceptable thesis, in this case a rather forcible indictment of medical methods and education as they now exist. The message is plain, independent, even iconoclastic, and certainly does not contain the smooth things that please the present-day Pangloss. The author has already stated his views in various papers, but here there is a connected argument running throughout the three, at first sight somewhat distinct, parts entitled "Critical," "Personal experiences," and "Constructive." His argument may be stated thus:

For the prevention of disease a knowledge of the early stages before structural damage has been done is essential. Further, the principle that a knowledge of symptoms is essential to any inquiry into the effects of remedies has never been properly recognized, and its neglect has rendered much investigation sterile, left our knowledge of drugs in a state of confusion, and made our pharmacopoeia mainly a storehouse of bygone beliefs. The correct assessment of symptoms, an accurate understanding of the mechanism of their production, and their bearing on the future health of the patient, are very difficult problems, and it is perhaps natural that the study of medicine has hitherto chiefly been devoted to the late effects of disease, as shown by physical signs in the wards and morbid changes in the *post-mortem* room. The failure of medicine to detect the early stages of disease is due to the fact that the patient's sensations have never been adequately investigated. In order to correct this the most experienced physicians, with all the most efficient means at their disposal, should logically see out-patients in the early stage of symptoms, when further changes can be arrested; and the younger members of the hospital staff should look after the advanced cases in the stage of physical signs in the wards.

But more than this is necessary for the efficient observation and assessment of symptoms; the patient must be under continued supervision, and this is the function of the general practitioners, who have opportunities that are rarely, if ever, open to the hospital physician as such, and should be recognized as having a definite part in the advancement of research. In reply to the possible retort that they have for all time had these opportunities without using them, it is pointed out that until comparatively recent times the teachers of medicine and those who have done so much to advance our knowledge have been to all intents general practitioners, such as Harvey, Hunter, and Jenner. The author's experience in general practice gradually forced on him the question, "Do I understand the meaning of one single sign or symptom in all its aspects—for example, the mechanism of its production or the bearing of its cause upon the patient's general health?"—and he had to admit that he did not. This led to an investigation into the significance of pain, and in the article on this subject, and in others on cardiac affections in Part II of this work, the method of investigating symptoms, acquired with much labour, is set forth as a suggestion of what may be done in the case of other symptoms. One of the objects of this book is to show that medicine can be made more simple in its practice, and at the same time more efficient. For it has become extremely complex; specialism has reached an extreme degree, and in the use of laboratory methods there is the risk that the patient may be ignored by the physician, who thus loses the opportunity of gaining much valuable information by investigating the patient's symptoms. For successful

[1] *The Future of Medicine.* By Sir James Mackenzie, M.D., F.R.S. London: Henry Frowde, and Hodder and Stoughton. 1919. (Demy 8vo, pp. 238. 8s. 6d. net.)

research a thorough training in symptoms, and personal contact with the patient, rather than seclusion in a laboratory, is the proper course. In order to show that this simplification of medicine is possible, Sir James Mackenzie applies it to one organ—the heart—and insists that what has been done in this direction can also be effected in the case of other organs, if the same lines of investigation are pursued.

The methods of medicine determine medical education and are reciprocally influenced by it. On this important subject the author speaks with no uncertain voice. The vast majority of students ultimately become general practitioners, but their teachers have not been through the mill of general practice, and accordingly much of the students' time is wasted in learning details that will not be of any use to them in future practice. Anatomy and physiology are generally taught by specialists, and so often become somewhat divorced from practical application. In every medical school there should be a teacher with a broad outlook on the whole field of disease, so that he may be able to give the students a proper perspective of the different sections. This place was once occupied by the physician, but during the last fifty years the laboratory workers and the surgeons have made such progress that they have to a large extent usurped his position. As an attempt at adaptation to new conditions the high road to a physician's post often lies through the laboratory, and the regulations for appointments to teaching hospitals tacitly exclude a training in general practice, which is the really efficient means of gaining more than a superficial insight into the problems of disease. A young man should be encouraged to enter general practice with the object of eventually gaining a place as a teacher in a well equipped hospital, where he will be able to solve the problems he has had to face in practice; and in the meanwhile every medical school should have one or more teachers who have been in general practice for ten to twenty years.

These views, which are the outcome of much thought and deep conviction, may appear startling and therefore very possibly arouse opposition, but this is not a rare experience, for the reformer's crown is seldom complete without thorns or pinpricks.

PHYSIOLOGY AND MEDICINE OF AVIATION.

THE time has undoubtedly come for such a book as *The Medical and Surgical Aspects of Aviation*,[2] edited, and for the most part written, by Major GRAEME ANDERSON, who is surgeon to the Royal Air Force Central Hospital. A sketch of the history of medical interest in aëronautics and aviation is followed by a chapter on the selection of candidates, in which many of the tests employed are described. This is followed by a chapter on the applied physiology of aviation by Lieut.-Colonel Martin Flack, R.A.F.; it is a very valuable contribution, for it deals with the first principles. He begins by pointing out that the most important factor in the art of flying is the nervous control and co-ordination of the reflexes necessary for the management of the many accessory parts. The preliminary idea of the motor side of these flying reflexes can be obtained by studying the fundamental effector movements (effector responses) necessary to flying. These fundamental movements are, with the arms a fore-and-aft and a side-to-side movement; with the legs a to-and fro push of the rudder bar. In no other acquired accomplishment has man to keep so many groups of antagonistic muscles in a state of static wakefulness or to perform such a variety of co-ordinated leg and arm movements. The art can only be learnt by practice, but the pupil must have an innate disposition to acquire rapidly a new series of reflex acts. As this quality is required for excellence in all sports, the man who is good at sports is more likely than another quickly to become a good flier. The exercise coming nearest to flying in respect of the number and nature of the movements to be co-ordinated is, perhaps, horsemanship, and the possession of a good pair of hands and a good sense of balance in riding is a valuable basis for the acquisition of the art of flying; it is, however, no more than that.

On the sensory side the flying man is guided by impulses from the eyes, from the ears, from the skin, and from muscles and joints. There is no need to insist on the importance of visual impressions; the auditory are of consequence also, especially in the detection of defect in the running of the engine. The importance of the cutaneous impressions is very great, but less obvious. The pilot gathers information from the "feel" of his seat, from alteration in the direction of air pressure on the cheeks, and from the "feel" of the joy-stick and the impressions from the joints and muscle sense brought into play in its manipulation. We are thus brought to conclude that the requisites of a flier are a good vision and hearing, and a quick effective response to impulses thereby received; a good sense of balance in which impulses derived from the skin, muscles and joints play as important a part as those derived from the semicircular canals; and a delicate co-ordination of muscular movements, particularly in the interplay between the antagonistic muscles concerned in the various movements performed by those muscles. With training the whole of this delicate machinery eventually becomes automatic, and until it does the aviator cannot do those things for which he is sent up—to photograph, to observe, and to fight.

All these points in the acquisition of the art of flying are briefly, but very clearly and adequately, discussed by Colonel Flack. He then considers the various forms of strain to which the flier is subject, including the special physical strain in high flying due to the diminished proportion of oxygen. At about 11,000 ft. the air contains two-thirds of the normal proportion of oxygen—that is, 14 per cent.; the depth of breathing is increased, the blood pressure slightly raised, and the pulse quickened. Up to this height there is, as a rule, no obvious discomfort, but above this various symptoms arise, one of the most important being the mental exaltation, attended by confusion, to which Dr. Haldane referred in his recent lecture on anoxaemia. Colonel Flack recommends that the inhalation of oxygen should be begun at about 10,000 ft.; its introduction in such a manner as to make up for the deficiency of oxygen enables flying officers to keep at great heights in comparative comfort, for with enough oxygen there is neither respiratory nor cardiac distress, nor any period of exaltation or confusion of the senses. The diminution of atmospheric pressure in itself produces little or no effect, except the expansion of gases in the intestines, which, by pushing up the diaphragm, may interfere with respiration. It is partly on this account that the aviator should be careful in diet, especially with regard to a meal taken immediately before flying. Owing to the wear and tear of the organism, due to the repeated and intermittent strain upon the nervous, respiratory, and circulatory mechanisms, all aviators, after a longer or shorter time, suffer from fatigue; its treatment and the general management of the health of the aviator are fully discussed. We have said enough to show that this chapter is one full of interest to the physician.

The next two chapters deal with the psychology of flying, and aëro-neurosis. In the former, Major Graeme Anderson gives a table of the motives assigned by 100 consecutive pupils for taking up aviation. About half appear to have joined owing to the attraction and interest they found in the idea of flying, and the number is increased to 74 when the novelty of flying, a desire for excitement, the opportunity for individual action, and mechanical interest, are included. The motive is stated to be important in deciding whether a pupil will become a good aviator. The same chapter contains an analysis of the replies to a long series of questions filled up immediately after flying alone for the first time, and a good description of the author's own sensations. In a later chapter is embodied a note by Surgeon Oliver H. Gotch, R.N., based on notes of 200 selected cases of flying officers who broke down in respect of flying whilst on war service. The conclusion is that when a toxic element could be excluded the beginning of the breakdown was in a large majority purely mental, dating from some particular impression, experience, or act. The breakdown usually takes the form of neurasthenia, but occasionally of hysteria. One not unsatisfactory conclusion with respect to prognosis is that the shorter the flying experience the worse the prognosis, but the longer the experience the better the prognosis. The types and causes of aeroplane accidents and methods for their prevention are discussed by Major Anderson in a long chapter, containing a large number of striking illustrations,

[2] *The Medical and Surgical Aspects of Aviation.* By H. Graeme Anderson, M.B., Ch.B., F.R.C.S. London: Henry Frowde, and Hodder and Stoughton. 1919. (Demy 8vo, pp. xvi + 255; 27 plates, 20 figures. 12s. 6d. net.)

An analysis of 58 crashes brings out the fact that only one was due to a defect in the aeroplane, four to collisions, and four to unsuitable landing-places; whereas 42 were due to errors of judgement, either in getting off the ground, or, far more often, on landing. A chapter on the surgery of aviation does not contain much of novelty. In two chapters which, though a little beyond the scope of the book, are of general interest the effects of aeroplane bombs, and the precautions to be taken during hostile raids are discussed, and there is a final note on dope poisoning. A glossary of aviation terms is supplied, a bibliography, and an index. The book as a whole is to be thoroughly commended, although we could wish the author had revised his manuscript more carefully, to avoid a certain monotony of style and some lapses into ambiguity, defects which detract from the pleasure with which the book may be read.

OBSTETRICS.

PROFESSOR DE LEE'S *Principles and Practice of Obstetrics*[3] has reached its third edition, and has been brought up to date without the need of any striking change. Abderhalden's reaction is relegated to what is becoming generally recognized to be its proper place—namely, as a matter of considerable scientific interest but of almost no practical value. As in previous editions "twilight sleep" is uncompromisingly condemned, but we imagine that the prevalence of abuse of the method on the other side of the Atlantic has necessitated in some degree the sweeping judgement of those speaking or writing *ex cathedra*. It is interesting to observe that the author is an enthusiast for the extraperitoneal or transperitoneal method of Caesarean section, of which he has had experience in twenty cases. "If the present promise is realized," he says, "when the next edition of this work appears, a complete realignment of the indications for the treatment of contracted pelvis in general, and of the methods of abdominal Caesarean section in particular, will be necessary." We shall await the next edition with interest but without sharing the author's expectations.

The great merits of this encyclopaedic work are so well known that they need not be expatiated upon. The new edition fully maintains its place amongst the very best works on obstetrics in American literature. It is beautifully illustrated and clearly printed. Is it the mixed origin of the population of Chicago that leads the author into frequent polyglot expressions? The legend to *Fig.* 363—"Retroversio uteri adherenta with prolapse of Ovaries in Culdesac"—is refreshingly catholic.

THE EXPECTANT MOTHER.

DR. MARY SCHARLIEB'S book, *The Welfare of the Expectant Mother*,[4] forms one of a number of volumes called the English Public Health Series, edited by Sir Malcolm Morris, K.C.V.O. Such a series is a sign of the times; it signifies that the health of the people has now become in a real sense the business of the representatives of the people; it connotes such happenings as baby weeks, ministries of health, municipal maternity and child welfare schemes, preventive and curative infant health centres, and many other things which, little known before the war, are now the commonplaces of the newspapers. The present work in particular shows how public health has overflowed its banks, so to say, and swept midwifery into its main stream. The expectant mother and her nursling have found foster parents in the Houses of Parliament. The obstetrician may grumble at this invasion of his territory, and may imagine that the inference is lack of initiative on his part; but, whilst there may be a shade of justification for this conclusion in the profession's comparative neglect of preventive measures in pregnancy in the past, the obstetrician will wisely accept all that is now being done to supplement and reinforce his efforts for the comfort and safety of expectant mothers and their unborn infants.

Dr. Scharlieb's book is intended for members of local authorities, midwives, district and other nurses, school teachers, and the large body of health visitors and other helpers in public health work, voluntary and paid. Looking at it with this scope clearly in mind, it may at once be said that it admirably serves its purpose. The first part, which has to do with the hygiene and pathology of pregnancy, is necessarily brief, but it is sufficient; and the fourth chapter, which deals with the somewhat novel relationships which Midwives Acts have introduced between doctors, maternity nurses, health visitors, and the midwives themselves, is detailed enough for all practical purposes, and is, indeed, one of the most useful in the volume. The second part is concerned with the administrative care of pregnancy, and it could not, it may safely be said, have been written five years ago. The titles of the chapters reveal the novelty of the subjects: Maternity centres and maternity homes, Antenatal dangers, The problem of illegitimacy or the unmarried mother and the unwanted infant, Laws and regulations concerning maternity welfare—are all of them terms with a content very different from that which they had before the war, and especially before such legislation as the Notification of Births (Extension) Act of 1915 and the Maternity and Child Welfare Act of 1918. Dr. Scharlieb gives a full account of these and other pieces of legislation, but somewhat inexplicably omits all reference to the Midwives (Scotland) Act of 1915, with its curiously enigmatical relation to the English Act of 1902. The book is excellent, and will find its way into many a health worker's hands, with great profit to the health worker whoever she be.

AN ENGLISH-ITALIAN DICTIONARY.

THE second volume of Mr. ALFRED HOARE'S *Short Italian Dictionary*,[5] a book for the English student of Italian rather than the Italian student of English, is an excellent work that may be warmly commended to the attention of those who want a good English-Italian dictionary. It has the advantage of having been written by an author who knows English; and so is not stuffed with obsolete or dialect English words that are never used nowadays except by, say, authors of the kailyard school, the topical novel writer, the preciosity poet or the foreigner compiling an English word-book. Mr. Hoare's dictionary is of convenient size and well printed, and with more than the usual amount of truth may be said to supply a long-felt want. We wish it all success.

NOTES ON BOOKS.

THE seventeenth edition of Professor HARE'S *Textbook of Practical Therapeutics*,[6] that well known American work, has been brought up to date by the insertion of knowledge gained in the recent war—the use of Dakin's fluid and dichloramine-T by Carrel's method, and the paraffin treatment of burns, for example—and purged by the omission of various drugs of German origin. It begins with a number of pages on general therapeutical considerations; half the book deals with drugs, considered in alphabetical order; next follow chapters on remedial measures other than drugs and on feeding the sick; at the end are 180 pages on the treatment of diseases, again in alphabetical order, and two indexes. It is a thoroughly practical work, clearly written, not overloaded with detail, and adequately illustrated. Its author has a great fund of experience in practice and experiment to draw upon; the book may be warmly recommended to the attention of all medical practitioners in want of a textbook of treatment.

DR. DE TARNOWSKY'S *Military Surgery of the Zone of the Advance*[7] is a well written *vade mecum* on war wounds and diseases, compact, and adequately illustrated. It is a good example of a type of literature that will not, we earnestly hope, be wanted again, at any rate in this generation.

[3] *The Principles and Practice of Obstetrics.* By Joseph De Lee, A.M., M.D., Professor of Obstetrics at the North-Western University Medical School, etc. Third edition, thoroughly revised. Philadelphia and London: W. B. Saunders Company. 1918. (Sup. roy. 8vo, pp. 1089; 949 figures, 187 in colour. 36s. net.)

[4] *The Welfare of the Expectant Mother.* By Mary Scharlieb, C.B.E., M.D., M.S. 1919. London, New York, Toronto, and Melbourne: Cassell and Company, Ltd. (Cr. 8vo, pp. xi + 152. 5s. net.)

[5] *A Short Italian Dictionary.* Vol. II, *English-Italian.* By Alfred Hoare, M.A. Cambridge: At the University Press. 1919. (Demy 8vo, pp. vi + 294. 7s. 6d. net.)

[6] *A Textbook of Practical Therapeutics.* By Hobart Amory Hare, M.D., B.Sc., Professor of Therapeutics, Materia Medica, and Diagnosis in the Jefferson Medical College of Philadelphia, etc. Seventeenth edition, enlarged, thoroughly revised and largely rewritten. London: Henry Kimpton. 1919. (Med. 8vo, pp. 1023; 145 figures, 6 plates. 28s. net.)

[7] *Military Surgery of the Zone of the Advance.* By George de Tarnowsky, M.D., F.A.C.S., Surgeon to Cook County and Ravenswood Hospital, Chicago, etc. Philadelphia and New York: Lea and Febiger. 1918. (4¼ by 6, pp. 330; 35 figures. 1.50 dols.)

The social complications of congenital specific disease declaring itself at the end of adolescence are not, perhaps, the happiest of material for the novelist. Still, no doubt they have their uses as such; and readers in search of a delicate description of the troubles that may occur when the congenital infection becomes patent will find it in Mr. GEORGE COLMORE'S novel *The Thunderbolt*.[8]

In a pamphlet on *The Physiological Feeding of Children*,[9] both medical practitioners and intelligent laymen will find a large quantity of sound reasoning and advice on this important subject. Dr. PRITCHARD, the author, emphasizes the importance of maintaining a due balance between the different constituents of children's diets, pointing out in particular that there is often a deficiency of the mineral constituents in the daily food of town children, remediable by giving a larger proportion of green vegetables and fruit than is usually provided. He also dwells on the importance of vitamines, lecithin, extractives, and water (not less than two or three pints a day) in these dietaries; and, after setting out the general character of the meals that should be given to children, has several interesting pages on the digestibility of foods, and the connexion (often remote) between indigestibility and indigestion. Tables of calorie values are given at the end of the pamphlet, and also a large sheet showing a week's menus for children aged from 1 to 2.

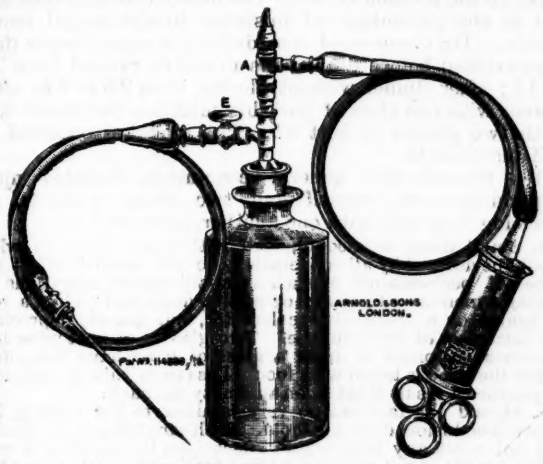
[8] *The Thunderbolt*. By George Colmore. London: T. Fisher Unwin, Ltd. 1919. (Cr. 8vo, pp. 312. 7s. net.)

[9] *The Physiological Feeding of Children*. A chapter written for the fourth edition of *The Physiological Feeding of Infants*. By Eric Pritchard, M.A., M.D., M.R.C.P. London: H. Kimpton. 1919. (Demy 8vo, pp. 59. 3s. 6d. net.)

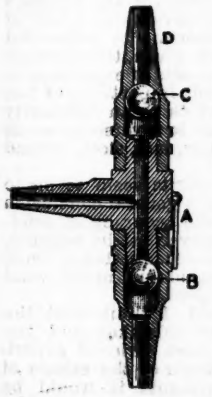
MEDICAL AND SURGICAL APPLIANCES.

A New Aspirator.

DR. HOPE ROBSON (Southampton) has designed the aspirator here illustrated. It consists of a valve chamber A, attached to the ordinary aspirator bottle; the vacuum, or negative pressure in the bottle, being produced



with a syringe connected by rubber tubing to the valve chamber; no exhaust pump is needed, the instrument being so designed that it will work with any ordinary syringe, such as an ear syringe. The valve chamber having been connected with the syringe, the stop-cock E is turned off; the syringe is then used as a pump; on pulling out the piston the ball valve B rises, and air is extracted from the bottle; at the same time the ball valve at C is sucked down, preventing any air entering the syringe from this part of the valve chamber. On pushing back the piston the ball valve at C rises and the air in the syringe is expelled at D, no air entering the bottle on account of the ball valve B falling and being held tightly in position by the suction in the bottle. As the pumping proceeds air is continually sucked from the bottle and expelled at D, a very high degree of vacuum being produced in the aspirator bottle. No tap is required between the valve chamber and the bottle, the ball valve B acting automatically seals the opening from the bottle, thereby preventing any loss of vacuum. There is nothing to get out of order, and the parts take to pieces and can be readily sterilized. The valve chamber can be detached and used where suction is required, as in Bier's treatment; attached to a suitable glass receiver it makes a powerful breast pump. The exhaust at D may be used if required as a continuous force pump for either liquids or gases. The instrument is manufactured by Messrs. Arnold and Sons, of Giltspur Street, London.



DENTISTRY, THE ARMY, AND THE STATE.

AT the annual meeting of the British Dental Association in London on August 8th, the president, Mr. Montagu F. Hopson, dental surgeon to Guy's Hospital, delivered an address in which he reviewed the share taken by dentists in the war. When it broke out, he said, the army had no organized dental unit either for home or field service. The resources of the British Dental Association were immediately placed at the disposal of the Government, and representations were made as to the lack of provision for dental treatment, and emphasizing the demand which must arise for its provision (1) to make recruits physically fit, (2) for men in the field, and (3) for dealing with wounds of the jaws and face. The expert advice thus offered was, Mr. Hopson said, rejected, and he continued as follows:

"That service dental arrangements were mishandled, not to say bungled, is generally admitted. Failure to grasp the situation may have been due to ignorance on the part of the chiefs of the Army Medical Department to begin with, but they later displayed a culpable obstinacy in the matter which led to a grave wastage of man-power and a large amount of unnecessary and easily preventable disease and suffering amongst the troops in the field and the wounded in our hospitals. The policy of our executive was clear and definite, and was finally vindicated—namely, that with an acknowledged general shortage of dentists even to meet the needs of the civil population, they could most advantageously serve their country in the national emergency in their professional capacity, and that all should be mobilized for service. The slow stages by which the recognition of so obvious a fact was reached you are familiar with. Dentists commissioned as temporary lieutenants on the general list were appointed in driblets, and were employed under the supervision of medical officers possessing no dental knowledge. There was an utter lack of organization. Examples of efficiency furnished by our Colonial Forces were persistently ignored. In the meanwhile, skilled and highly trained men were being wasted in the ranks, the proffered services of those possessing expert knowledge in the treatment of facial injuries were declined, and our dental schools, the nurseries of professional recruits, were depleted.

"For three whole years the Government remained indifferent to the value and importance of the dental surgeon as a national asset. As the war drew to its victorious close some sort of order gradually evolved in army dental arrangements, but there was still lacking that one essential to an efficient organization—an administrator possessing a dental qualification, and given unhampered authority over the men under his command. It is manifest that whilst army dental treatment must be closely linked with the Royal Army Medical Corps, it can never be adequate until a definite dental corps has been established, modelled on the lines adopted by our colonies and certain of our allies. Similar corps must be formed for the Navy and Air Force. Hence it is with profound regret, and no small amount of misgiving, that I read the new regulations promulgated as to dental service in the navy. They are unworthy of a great service and offer an indignity to our profession."

Dentists might well be proud of the services rendered to the nation during the war; no profession of its size did more gratuitous work, and all that it accomplished was done in spite of official opposition placed in its way. Some 1,300 dentists joined the forces and sixty were killed in action or died on service. A large number also rendered exceptionally valuable service as civilian dental surgeons in the treatment of wounds of the face and jaws in the war hospitals at home, and practically every man served his country in some way or another in a voluntary professional capacity.

Referring to the important report recently issued by the Dentists Act Committee, Mr. Hopson emphasized its statement that "the State cannot afford to allow the health of the workers of the nation to be continuously undermined by dental neglect. Steps should be taken

without delay to recognize dentistry as one of the chief, if not the chief, means of preventing ill health."

The position assigned to the dental profession was one of the chief outposts of preventive medicine. If it were to be held with success, a large and highly trained body of men would be required. Further, that outpost must be assured of all the help and succour it might need. *In other words, if dentistry was to help the State, the State must help dentistry* in education and in research. The new Education Act provided for the dental treatment of all children of school age. The Dentists Act Committee went a step further, and rightly insisted that dental treatment should be rendered available for all needing it. A Committee of the British Dental Association had drawn up a scheme for a complete public dental service. There could be no doubt that thousands of persons were receiving sickness benefit who would not be doing so had they received proper dental treatment. The Government had the recommendations of the Departmental Committee as a basis for legislation, and must act upon that.

The annual report, which was adopted, stated that the membership of the association had increased to 3,000, and that during the war seven members gained the D.S.O. (two with bar) and twenty-three the Military Cross (two with bar), while three had been awarded the C.B.E. and twenty-five the O.B.E. and M.B.E.

THE INFLUENCE OF ALCOHOL ON MANUAL WORK.

WE refer at length elsewhere (p. 209) to the results of an investigation carried out by Dr. H. M. Vernon for the Medical Research Committtee, on the influence of alcohol on manual work and on neuro-muscular co-ordination. One of Dr. Vernon's conclusions is that for every individual there exists some moderate dose of an alcoholic liquid which is without appreciable influence on neuro-muscular co-ordination, but he adds: "It does not follow that such a dose is without effect on the more complex nervous processes of the brain."

To Dr. Vernon's report Dr. Major Greenwood contributed an account of some experiments on himself which seem worthy of extended notice because made under conditions which departed little from the normal routine of a busy man leading a sedentary life. They were directed to ascertain the speed and accuracy, before and after taking known quantities of alcohol, of his use of a typewriter and of an adding machine, with both of which he was familiar. The trial with the typewriter consisted of copying a passage consisting of nine Latin hexameter lines containing 355 letters, spaces and stops, and involving eighteen further movements for striking capitals and moving the paper carrier. The passage was typed eight times on each day, four times before and four times after dinner.

Each set of four typings comprised (*a*) a first *slow* typing, the passage being written down at about the pace I usually adopt for letter writing; (*b*) a *fast* typing—that is, one made at a rate which seemed subjectively a good deal faster than (*a*) but not so much faster that I had any difficulty in striking the keys; (*c*) was a repetition of (*a*); and (*d*) was a repetition of (*b*). Hence each series comprised two "slow" and two "fast" trials. The actual time at which the before-dinner series was carried out varied, but was usually between 8.30 and 8.45 p.m. (summer time), and always within a few minutes of dining. The after-dinner series was arranged to commence from thirty to forty-five minutes after the alcohol had been drunk.

Alcohol was taken in the form of port wine of known strength; either one or two glasses were drunk, the actual quantities of absolute alcohol taken being 18.5 and 37 c.cm. On the non-alcohol evenings I drank tea with my dinner, either two or three teacupfuls of an ordinary infusion without sugar. I adopted this practice because the disadvantage of using a caffein-containing beverage on the control evenings seemed outweighed by the advantage of preserving the normal routine, it being my regular practice to drink either a glass of wine or some cups of tea with my evening meal.

An examination of the results did not show, either in respect of speed or average mistakes, any departure from the general level when 18.5 c.cm. of alcohol (one glass of port) was taken. When two glasses of port (37 c.cm.) were taken there was a decided deterioration in the quality of the work done. These results were in general agreement with those obtained by Dr. Vernon, and Dr. Greenwood considers that certain divergence in detail might be due to the fact that the slow rate of typewriting was familiar and not easily disturbed, whereas the fast rates were not normal, and liable consequently to be disturbed by drug action or otherwise with greater facility. Dr. Greenwood continues:

I think it is of importance to take account of the interruption of habit in experiments of this kind. I suppose most sedentary workers lead regular lives, particularly with respect to the routine of their meals. I have, for certainly ten years, been accustomed to drink a small quantity of wine at dinner, but I cannot recall ever taking more than a single glass of a fortified wine *when I intended to do any work after dinner*. It is a matter for consideration whether the fact that (in the 37 c.cm. experiments) my routine was broken through may not have influenced the result. While a single glass of port wine produces in me no subjective effects save a slight increase of well-being, two glasses lead to an appreciable vertigo. The fact, however, that the deteriorating effect in any case is more accentuated at the rapid rates of typing, where there is less leisure for introspection than at the slow rates, is possibly significant.

With the adding machine experiments were made after a meal with and without alcohol respectively, and also for six days when taking alcohol during the afternoon without food. On this series of experiments Dr. Greenwood makes the following observations:

If the alcohol experiments with food be compared against a mean of the non-alcohol experiments made before and after, the deterioration—measured in terms of mistakes—amounts to 42 per cent., whilst a similar comparison in the fasting experiments shows a deterioration of 74 per cent. This latter figure is of the same order of magnitude as the deterioration experienced in the typing series when twice the volume of alcohol was taken but with a meal. The result is therefore in agreement qualitatively with those of Dr. Vernon and other investigators, testifying to the specially unfavourable action of alcohol taken on an empty stomach. Quantitative comparison is naturally excluded by the variations of other conditions (time of day, nature of task, etc.).

Dr. Vernon found a general average increase of 69 per cent. in the number of mistakes when 30 c.cm. of alcohol were taken with food. Dr. Greenwood in his typewriting series found an increase of nearly 80 per cent. after 37 c.cm. To prevent the production of an exaggerated idea of the effect, it should perhaps be noted that the calculations refer to the relation between the number of mistakes and not to the percentage of mistakes to the actual movements. Dr. Greenwood records that in experiments (fast typewriting) before dinner his mistakes ranged from 3.4 to 4.1; after dinner without alcohol from 2.6 to 4.3; after dinner with one glass of port his mistakes numbered 4.3; with two glasses of port 6.5. The mistakes occurred in ·373 movements.

Dr. Greenwood's general conclusion, founded upon experiments on himself and two other subjects, all agreeing very well with one another, are as follows:

1. Small doses of alcohol, well within the limits of what would be deemed by all moderation, do not sensibly affect the speed of performance of such semi-automatic operations as typing a memorized passage or setting down and adding a row of figures on a mechanical calculator, but gravely depreciate the accuracy of performance. Two glasses of port wine in a person accustomed to drink a glass of wine have this effect when the wine is taken with food. Less than this is sufficient to produce a result if taken on an empty stomach.

2. Should the task set be very familiar to the subject, the above conclusion does not hold. Such small doses of alcohol did not exert any measurable effect upon the number of mistakes in either a typing or adding test made with a speed of performance to which the subject had become familiarized by long practice. None of our experiments bring out any effect upon the slow addings or typings, experiments which were made at a speed to which we were quite accustomed.

3. A corollary of 2 is that we cannot confirm Dr. Vernon's observation attesting the particularly unfavourable effect of alcohol upon the first of a series of experiments performed under its influence. For the reason just given, this does not involve any contradiction between the two sets of experiments. We had not realized beforehand the possible importance of this habit factor, and in order to test the point as to an inferiority of first trials it would have been necessary to reverse the order and to have made the series run fast, slow, fast, slow, instead of the other way round.

From the practical standpoint, these results seem to me to emphasize the importance of Dr. Vernon's general conclusion that moderate doses of alcohol affect the accuracy of semi-automatic work more than a casual observer might suppose, while the way in which this effect seems accentuated in work performed under relatively novel conditions is much what ordinary experience would lead us to expect.

Lastly, as to the experimental method, I think that the irregularity of the time equivalents of mistakes and the seeming impossibility, at any rate with short series of experiments, of arriving at a quantitative measure of the effects of practice, suggest that in future experiments it would be advisable to perform the tests at as uniform a rate as possible, measurements not being made until a training period has elapsed sufficient in length to render subsequent improvement with practice very slight.

British Medical Journal.

SATURDAY, AUGUST 16TH, 1919.

AIMS AND METHODS OF MEDICAL EDUCATION.

For some years before the outbreak of the war medical education was the subject of much keen criticism and analysis with a view to reconstruction. Mr. Abraham Flexner's detailed reports, to the Carnegie Foundation for the Advancement of Teaching, on the medical schools of the United States and Canada (1910), and of Europe (1912), and the report of the Royal Commission on University Education in London (1913) gave rise to much discussion, especially on the vexed question of whole-time teachers. This conception at first met with considerable conservative opposition, but is now generally accepted, at least in principle, though it remains to be seen to what extent it will be carried out in this country. In America it was started before the war; at the Johns Hopkins Hospital Drs. T. C. Janeway, W. S. Halsted, and J. Howland were appointed on the whole-time basis to chairs of medicine, surgery, and pediatrics early in 1914. Professor Janeway's lamented death has led to the appointment of Dr. W. S. Thayer, who has been so long and so eminently connected with this great school.

The delay in this country, accentuated by the war, though regrettable in some respects, has given time for more mature consideration, and possibly may thereby ensure a more complete solution of the problems of medical education than is included under the heads of whole-time teachers and the co-ordination of laboratory research, important as they are. Sir George Newman's "Notes on Medical Education," addressed to the President of the Board of Education last year, and the symposium at the Edinburgh Pathological Club[1] have given broad reviews of the problems, and Sir James Mackenzie, who contributed to the Edinburgh discussion, has in his recently published *Future of Medicine* (reviewed on page 204) emphasized an aspect of medical education which must be taken into account in any scheme of reconstruction.

His argument is briefly as follows: The teacher of practical matters must be one who has experience of what he teaches, and yet medical students, the great majority of whom ultimately go into general practice, pass, during their curriculum, through the hands of a large number of teachers no one of whom may have had any experience of the life work of a general practitioner. As a result the future general practitioner's education is defective; it is true that he learns medicine, but it is mainly that of physical signs and advanced disease, and he has few opportunities for becoming acquainted with the detection and prognostic significance of the symptoms of incipient disorder. In other words, medicine from this point of view shows little evidence of passing out of the period of morbid anatomy into that of disordered function, which is the direction that metabolic and other methods of research indicate as likely to ensure progress. Sir James Mackenzie's exceptional experience as a general practitioner for twenty-eight years and then as a London consultant for eleven years lends weight to his dictum that those whose practice has been confined to the hospital ward, the laboratory, and the consulting room, have no conception of the difference between their work and that of the general practitioner. The observation of early symptoms offers a great but much neglected field for research to men in general practice, who should be so educated as to be able to make the best of their unique opportunities. In order to accomplish this the teacher must have the necessary experience, but the path to the staff of a teaching hospital runs through the laboratory and not through general practice, and the resulting uniformity has drawbacks, such as a restricted outlook and even inefficiency. Sir James Mackenzie maintains, therefore, that every school of medicine should have one or more teachers with ten to twenty years' experience of general practice, who from constant and intimate association with patients in the course of private practice have acquired to an exceptional degree the ability to detect and assess the manifestations of disease, and are thus able to instruct the students, their broad and human outlook serving to counteract any undue specialism born of intensive application to a particular branch of medicine. No doubt the choice of this new hospital teacher might present some difficulties and would require much care, but if it became recognized that these posts, with consulting practices, were open to men who would train themselves in general practice, a great incentive would be provided.

Sir James Mackenzie's scheme deserves attention, and there appears to be room for such a hospital physician rich in the experience of general practice, as the colleague of the whole-time professor and the ordinary consultant. Most men of fifty can call up the names of hospital teachers who started life as general practitioners, so, after all, the scheme is not on quite unknown lines, though in the future they may be improved.

[1] *Edinburgh Medical Journal*, 1918; republished (1919) for private circulation (W. Green and Son, Ltd., Edinburgh) under the title *An Inquiry into the Medical Curriculum*.

DRINKING—THE CAUSE OF DRUNKENNESS.

The Medical Research Committee has recently published two reports[1] on the absorption and on the early effects of alcohol and alcoholic beverages. The one by Dr. Edward Mellanby relates the results of a long series of experiments on dogs in which by chemical estimation of the amount of alcohol in the blood it was sought to ascertain the rate of its absorption and of its disappearance; the other, by Dr. H. M. Vernon, is founded on experiments on man designed to elucidate the influence of alcohol on manual work and neuro-muscular co-ordination. Of the two reports Dr. Vernon's is of the more general interest, since its application to man living under normal conditions of town life is direct, but Dr. Mellanby's results coincide sufficiently closely to justify their application to man. His chemical estimations, in fact, explain some of Dr. Vernon's observations.

Dr. Vernon performed a large number of experiments on himself and others. Briefly stated, the main results are that moderate quantities of alcoholic liquids can produce measurable effects, that these effects are very distinctly diminished if the alcohol is taken with a meal, and that pure ethyl alcohol is slightly less toxic than whisky, brandy, and claret when the liquid taken contained the same amount

[1] H.M. Stationery Office. Medical Research Committee: Special Report Series, Dr. Mellanby's Report, No. 31, 1s. n.t, post free; Dr. Vernon's, No. 34 (not yet on sale).

of alcohol. The experiments were made on eight men and five women. The observations concerned the accuracy and speed of typewriting in seven subjects, of using an adding machine in three, and of target pricking in six. In the last method a sheet of squared paper with dots at regular intervals is suspended vertically; the subject stands at arm's length and with an awl pricks two vertical rows of dots, the first down and the second up. The results were much the same for the typewriting and adding machines and for the target, but the use of more than one method enhances the value of the experiments.

Stated generally, the effect of a dose of alcohol (pure, potable spirit, or wine) which produced any effect was to decrease speed and increase mistakes. The observed effect on accuracy was greater than on speed; the evidence on this point does not seem conclusive, but it is of minor importance; in estimating results a factor combining speed and error was used. When taken on an empty stomach alcohol was found to be about twice as toxic as when taken with food, and the degree of dilution made only a slight difference. A dilution at 5 per cent. had about three-fourths as much effect as dilutions at 20 or 40 per cent. when the alcohol contained in the quantity of liquor taken was the same. The difference is attributed to slower absorption from the greater bulk of fluid, and we gather that Dr. Mellanby would agree. The same explanation is applied to the smaller effect of alcohol when taken with food. This conclusion is borne out by Dr. Vernon's observation that the effect following ingestion of alcohol on an empty stomach reaches its maximum sooner, that this maximum is higher, and that the effect passes away more quickly, than when the same dose is taken with food. Dr. Mellanby's conclusion from dogs is that the rate of accumulation of alcohol in the blood, after it has been introduced into the stomach, apparently the empty stomach, is rapid, and reaches its maximum in from half an hour to two hours, but that the rate at which it disappears is very slow, much slower than Dr. Vernon's experiments would suggest. The disappearance, it should be remembered, is due to oxidation. Dr. Mellanby found that fat inhibits absorption of alcohol to some extent, more especially that of the stronger solutions of alcohol he gave. Of the foods he used milk was the most effective in delaying absorption into the blood, but he doubts whether the whole of this effect is due to the fat in milk. Dr. Vernon made a few experiments on the influence of the quality of the meal on speed and accuracy. He found that when the meal contained a large proportion of fat the effect of the alcohol was produced a little later, did not reach quite so high, and was decreased less rapidly than when the meal was fatless. His explanation is that in the first place fatty food is digested more slowly than fatless, and delay in the digestion of a meal as a whole must delay the complete absorption of the alcohol taken with it; and in the second place, that as fat has a considerable solvent power for alcohol, a portion of the alcohol cannot be absorbed until the whole of the fat is absorbed likewise. The second reason seems more valid than the first, which, so far as we know, is no more than an *obiter dictum*, but a discussion of both would be interesting.

One point which Dr. Vernon seems to have established conclusively is that above a certain minimum, which appears to vary in different individuals to an extent that is of practical consequence, "the adverse influence of alcohol on neuro-muscular co-ordination varies in arithmetical progression with the quantity taken" in, we assume, a given time. The increase in target errors, for example, was directly parallel with the amount of alcohol taken, so that the chart shows a straight line from a certain small dose to the largest. Dr. Mellanby found that when a certain small dose was exceeded the amount of alcohol at its maximum in a unit volume of blood is proportional to the amount administered (if the stomach and intestine be empty). The absorption of alcohol into the blood in dogs is very rapid, and the same seems to be true of man; its disappearance is slow but quite regular; he thinks that if a second dose is given before the whole of the first has disappeared from the blood the amount of alcohol in the blood will be the greater by about this proportion. With regard to intoxication, Dr. Vernon concludes that the obvious signs of that condition are not due to the toper being suddenly overcome by the last glass. He was nearly drunk before, and the last glass merely took him over his border line. These conclusions are very much the same as that expressed in Sir Wilfrid Lawson's epigram which annoyed so many worthy people at the time it was uttered—"Drinking is the cause of drunkenness."

With regard to the onset and duration of the effect of alcohol, we may take Dr. Vernon's statement in his summary as fairly representing the conclusion to be drawn from all the experiments; this is, that "the effect reached its maximum half an hour after taking alcohol on an empty stomach, and might completely disappear in two hours. When the alcohol was taken with food the effect was slightly longer in reaching its maximum," and, as we gather, longer also in falling away from it.

The experiments do not give much information as to tolerance for alcohol. Dr. Vernon obtained some evidence of a rather rapid establishment of a slight degree in himself, and if there is no fallacy in one of his experiments, on a man who had been a heavy drinker of whisky for three years but for a year had reduced himself to three pints of beer a week, the tolerance or immunity persists for a long time—a year in this instance.

One sentence in Dr. Vernon's report, to which attention is called in the introduction, has drawn a certain amount of ridicule, the aim of which, we think it not uncharitable to assume, was to discredit the whole inquiry. It is that "the effect of drinking alcohol with and without food . . . has been curiously ignored by most previous investigators." Taken in its context as referring to scientific experiments, experiments, that is, in which an attempt has been made to obtain an accurate measure of the quantity of alcohol and of the effects, the statement is correct, but taken in a general sense to include rough social and clinical observation and experiment, it is not. To advise a man to take alcohol only at a meal is a commonplace of the consulting room, the main reasons perhaps being the belief that the irritating effect of the alcohol on the gastric mucous membrane will be the greater if not mixed and so to say diluted by food, and recognition of the evil effects of nipping between meals on the character, and the great liability of the establishment of the chronic alcohol habit.

Alcoholic beverages have been used so long and so widely that a folklore has grown up as to their relative "wholesomeness," as to the various parts of the system they severally most affect, and as to the character of the symptoms of the intoxication each produces. About such matters neither Dr. Vernon nor Dr. Mellanby has anything to say, rightly no doubt, for the subject is a by-way of history with little relation to their inquiries.

THE FOOD POSITION IN GERMANY.

It could not, of course, be expected that a reading public perturbed by the Zachariassen conspiracy, and excited to frenzy by the soul-shattering revelations of Miss Douglas-Pennant and Miss O'Sullivan, would be able to devote time to the lucubrations of a mere physiologist. It is, however, possible that Professor Starling's report on food conditions in Germany[1] is nearly as important as the discoveries of Scotland Yard or the revelations of Sir John Hunter.

So far as concerns past events, the investigations of Professor Starling and his colleagues, Mr. Guillebaud and Mr. McDougall, may be described as a statistical verification of the general conclusions expressed in Professor Starling's Oliver-Sharpey lectures. The immediate cause of Germany's failure was the adoption of a national food policy unsound in principle and unworkable in practice. The errors of principle were (1) an attempt to ration all the essential foodstuffs; (2) an attempt to maintain the head of cattle. These were physiological errors. Correlated with these were social-economic errors, such as winking at evasions of the law by powerful interests, and the systematic favouring of the agrarian parties. The practical consequence was that, although, in 1917–18, the total available food, after meeting the needs of the army, would, had it been equally divided, have given each average "man" over 3,000 calories per diem—not much less than the 3,300 calories assumed by the Allies to be sufficient—actually, the working and middle class populations of the cities obtained little more than 1,500 calories. The food producers continued to consume about their pre-war ration of 4,000 calories, and even the surplus was not available for equal sharing, some 25 per cent. being disposed of through illicit channels and therefore being only available for those who could pay fancy prices. Even now, "the man who will feed as he did before the war, can still do so, but at a cost ten times what he paid previously. I was informed of one household which before the war spent 25,000 marks a year on food and servants, but now spends 250,000 marks a year on the same objects."

The result was that the urban populations were starved and the national resistance collapsed. The consequences, so far as these are expressible by mortality figures, were exposed by us in a recent note on Dr. Döring's monograph. Professor Starling does not add much to this branch of the subject; but he does provide a painfully vivid account of the "general apathy, listlessness, and hopelessness" of the population. We do not know how better to summarize it than in the words of Isaiah: "And gladness is taken away, and joy out of the plentiful field; and in the vineyards there shall be no singing, neither shall there be shouting: the treaders shall tread out no wine in their presses; I have made their vintage shouting to cease."

The patriotism which can enable a man to read Professor Starling's account with pleasure is, we hope, an uncommon attribute. Such is the condition of Germany now; what of the future? Professor Starling's view is that under the most favourable conditions, even if Germany is treated by the world as a sick child to be nursed back to health, at least one and perhaps two generations must pass before she can recover her previous efficiency. In the coming year, unless supplies, estimated by Professor Starling as about a quarter of the normal food imports of the United Kingdom, supplies which Germany has no credit to purchase, are introduced into the country, it is idle to expect the German workmen to put forth their full powers. "This is the condition of Germany at the present time—her supplies of food and raw material exhausted, and her spirit broken. But the social machine is still intact; her factories and a great part of her coal mines, with many hundreds of years' reserves, are intact, and she possesses not only trained scientific foremen of industry, but also the most industrious, docile and skilled workmen in Europe. There are no marked feelings of resentment against the Allies, especially against the English, and they are ready to work for whoever will feed them and clothe them. There is, in fact, in Germany a magnificent business paralysed for lack of working capital, and to be controlled by anyone who will supply this working capital."

The conduct of all human affairs rests upon a physiological basis. In the ordinary action of an artificial civilization this is overlaid by strata the arrangement of which receives all the attention of publicists. Events of the past four years have brought us back to the primordial rock. Germany failed to conquer the world; she may still perhaps play the part of Samson. Professor Starling has enunciated the physiological problem; it remains to be seen whether that problem can be solved. The public do not yet realize that this is not merely one of many problems the world has to face but the dominant issue of the time. There is a vague impression that the bidding of Germany in the world's food market will raise home prices and that the competition of her manufactures will reduce wages and profits—that is all. What will happen if the "Hun" remains unfed and unproductive does not seem to interest the man in the street.

[1] H.M. Stationery Office. Cmd. 280. 1919. Price 6d. net.

THE UNIT SYSTEM IN MEDICAL SCHOOLS.

On July 26th we called attention to the delay which had occurred in making the allocations to medical schools out of the increased parliamentary vote for universities and colleges in the United Kingdom, and we pointed out that the delay was for many reasons particularly serious for the medical schools, since, in view of the fact that the new session must be opened in a couple of months, it was very essential that they should know where they stood and be able to make their arrangements in accordance with the scale of financial assistance they were to receive. On August 2nd we were able to announce that certain London medical schools which had prepared schemes for the reconstruction of their clinical teaching had been officially informed that they could count upon financial assistance from the State based upon the approved expenditure incurred in carrying out these schemes. We understand that in consequence a certain number of medical schools in London have prepared preliminary schemes for the experimental application of the unit system on a part-time basis for the heads of the units, and that among those which have their preparations well advanced are the medical schools of St. Thomas's Hospital and St. Bartholomew's Hospital. We hear that Sir Cuthbert Wallace, K.C.M.G., will probably be the head of the surgical unit at St. Thomas's Hospital and Mr. G. E. Gask, D.S.O., of that at St. Bartholomew's Hospital. Neither appointment will be whole-time, thus conforming to the original conception that the head of a clinical unit should be, not a whole-time academic officer, but one who, being actively engaged in clinical practice, is prepared to make his teaching duties a first consideration. The head of the unit, as professor, would have two assistants, and about sixty beds and a laboratory; a pathologist would form an essential officer of the unit. Further, it is intended that the staffs of the medical and surgical units shall work in close relation the one with the other, so that the

teaching may be kept in unison on natural clinical lines. A decision has not yet, we believe, been reached with regard to the heads of other units, but it now seems probable that on the opening of the winter session there will be units, in medicine and surgery at least, in four London medical schools.

BIRTHDAY HONOURS.

A LIST in continuation of honours previously granted on the occasion of the celebration of the King's birthday was issued on August 13th. The baronetcy conferred upon Mr. H. Gilbert Barling affords recognition of conspicuous services, academic, surgical, and military. Sir Gilbert Barling is Vice-Chancellor of the University of Birmingham, and before that was Dean of its Medical Faculty. He is consulting surgeon to the Birmingham General Hospital, and during the war has acted as consulting surgeon, with the rank of Colonel A.M.S.; he received the C.B. in 1917. An interesting announcement is the knighthood conferred upon Dr. Robert Charles Brown of Preston. He was born there on October 2nd, 1836, in the house in which he now resides. He is an honorary freeman of the borough, and is consulting medical officer to the Preston and County of Lancashire Royal Infirmary. He has been three times president of the Lancashire and Cheshire Branch of the British Medical Association, and on the third occasion in 1913 delivered an address in which he recalled the "Surgical Milestones" of his day. He has been a generous benefactor of the town of his birth, and has shown his readiness to assist in what he felt to be good causes elsewhere; one instance was his presentation to the Cambridge Hospital for Special Diseases of a very complete *x*-ray installation. Sir Robert Brown's influence has been wide, and it has always been exerted for the betterment of medicine and the maintenance of a high standard of professional conduct. The honour of knighthood is conferred also upon Mr. W. Ireland de Courcy Wheeler, surgeon to the household of the Lord Lieutenant in Ireland and to the Mercer's Hospital, Dublin. During the war he served, with the rank of honorary lieutenant-colonel, as honorary surgeon to the forces in Ireland, to the Dublin Hospital for Wounded Officers, to the Duke of Connaught Hospital for Soldiers, and to the Military Orthopaedic Centre, Blackrock. The same honour is conferred upon Mr. J. W. Y. MacAlister, secretary of the Royal Society of Medicine for the last thirty-two years. The amalgamation of the numerous medical societies in London into the Royal Society of Medicine was brought about very largely through his efforts. He was also largely concerned in the recent formation of the Fellowship of Medicine, which we hope has a great future before it, in spite of some present signs of slackness or disunion. We may note also the baronetcy conferred upon Mr. Laurence Philipps, who, with his wife, presented the Rookwood Hospital for disabled sailors, soldiers, and civilians to Wales as a part of the Welsh National Medical School.

HEALTH CONSULTATIVE COUNCILS.

WE understand that the Committee of Selection appointed by the Minister of Health to advise him as to the persons to be appointed to the Medical Consultative Council, which must be set up under the Act, has reported, and that Dr. Addison will probably shortly be in a position to announce the names of the members. It will be remembered that on May 28th Dr. Addison, in reply to Dr. Farquharson, said that it was his intention so soon as the Council was set up to refer to it various questions in respect of the development of local health services, and that he would not submit any proposal to the Government on these matters until he had obtained the advice of the Council. It is intended to appoint four Consultative Councils: (1) Medical and Allied Services; (2) National Health Insurance (Approved Societies' Work); (3) Local Health Administration; (4) General Health Questions. Each Council is to consist of not more than twenty members, and must include women. It is, we believe, the intention that two of the members of each Council shall be women. The Minister of Health will be the President, and the Parliamentary Secretary the Vice-President, of each Council, and each will have a chairman, vice-chairman, and a secretary. To the Council concerned will be referred questions arising upon orders and regulations proposed to be made, questions of principle and scientific difficulty, and other questions concerning the powers and duties of the Minister, who undertakes to place at the disposal of the Council the information required to enable it to consider matters thus referred to it. Each Council will have power to ask the Minister to refer to it any questions relative to its department. It may also present to the Minister a report on any matter, even though not referred to it, and the Minister must receive and consider such report. A member of a council holds office for a term of three years, but will be eligible to be reappointed for another term. In the selection of members of the other councils the Minister is following the same procedure as in the case of the Medical Council. He has, for instance, asked a number of bodies to suggest names of suitable members for the Local Health Administration Council. The bodies so invited are the Association of Municipal Corporations, the County Councils Association, the Urban District Councils Association, the Rural District Councils Association, the Association of Poor Law Guardians, the London County Council, and the National Association of Insurance Committees.

AN APPEAL FROM NORTH RUSSIA.

THE following telegram, dated Archangel, August 9th, has been received by the British Medical Association: "We, physicians of the Northern region, are, together with the rest of the population, experiencing great anxiety, having heard of the impending departure of the brave British troops. We have been informed of the resolution passed on July 27th by the conference of the Labour Party, and we assert that the allied troops defending this region from the Bolsheviks are in no way serving the interests of reaction or restitution of the old régime. The anti-Bolshevist struggle carried on, with the help of the allies, by the Northern region aims at putting an end to civil war and to create a truly free country on genuine democratic principles. Bolshevism, while ruining our country, destroys all State foundations and all the achievements of the civilization of mankind. The sparsely populated Northern region is doomed to destruction if left to her own weak resources. The moral effect of the departure of the allied troops during the height of the struggle will put a severe strain on the feeling of friendship and the belief in the fraternal assistance of the allies, and such a withdrawal will place the region in a considerably worse position than that of June, 1918. Millions of corpses and maimed Russian men, thanks to whose efforts the allies gained their well-earned victory, call to the British people to help their mothers, wives, and children, who are doomed to violation and destruction, while the whole region will be put to fire and the sword. We appeal to you British physicians to use your influence with your people to help us in the hour of our need, and that sufficient forces be sent to permit us to organize our own and establish order in the land now groaning under Bolshevik tyranny.—Praesidents Grenkoff, Fedossiev, Belilovsky."

MEDICAL ARRANGEMENTS IN THE AFGHAN CAMPAIGN.

IT has been known for some time to those who have paid attention to the matter that during the early stages of the war on the North-West Frontier of India, happily brought to an end by the declaration of peace with Afghanistan on August 8th, the troops suffered through the medical and

transport services being starved. It might have been hoped after the experiences of the first stages of the Mesopotamia campaign, and the severe criticisms of the Royal Commission, that the responsible members of the Government of India would have realized the folly of false economy in the equipment of services essential to the health and comfort of the force, yet the Mesopotamia error was repeated last May on the North-West Frontier, though on a smaller scale, since the operations were much less extensive. The difficulties encountered by the medical services were seriously increased by an epidemic of cholera which broke out in June at seven different points and lasted twenty days, during which there were 1,663 cases and 566 deaths, including 6 British officers and 15 other ranks. The epidemic was brought to an end through the efforts of the medical staff, in spite of the lack of adequate resources. The number of men evacuated to hospitals has been large, but not, it is said, larger than the very hot weather experienced made probable. A new scale of rations was adopted, but there was much delay in issue owing to the want of transport which during May and the early part of June hampered both the medical and the supply branches. The impression that the early preparations were wholly inadequate, although the probability that the Amir would attempt an aggression was foreseen, was confirmed by the issue about the middle of July of a communiqué by the Government of India. When that Government excuses itself any man who knows anything of its ways surmises that it has been accused of some serious failure. The communiqué was issued because a "very natural anxiety has lately been expressed in the press with regard to the health and comfort of the troops at the front." After specifying the places where ice machines and mineral water factories had been set up, and stating that the scale of rations both for British and Indian troops had been made much superior to any previously granted for campaigns in India, the communiqué continued: "Orders have been issued to all generals in command that medical officers are to ask for whatever they deem necessary for the comfort of the sick and wounded in their charge, and that their demands are to be met at once. Additional hospitals for 4,000 British and 8,000 Indian troops have been established in specially fitted barracks in proximity to the frontier, and electric light and fans, where none already exist, are being supplied to the former. Convalescent dépôts for officers and soldiers have in addition been formed, mainly in the Murree Hills. Special arrangements have been made for the supply of fresh milk to the sick in hospital, and herds for this purpose have been so far at the front as places such as Dakka, Bannu, and Tank. The scale of equipment of Indian field hospitals has been reviewed and much augmented." It is then stated that arrangements had been made for the establishment of field force canteens for British and Indian troops at selected places on the frontier, and that the necessary personnel and stores had been dispatched. Rest camps for British and Indian troops had been organized at Umbala, Lahore, Rawalpindi, Nowshera and Peshawar, and Quetta. Tea-rooms were being established at various railway stations, and were to be extended to all stations and camps at the front. The communiqué concludes as follows: "To ensure that the above arrangements for the health and comfort of the troops are working satisfactorily, and up to the standard designed by the Commander-in-Chief, staff officers from general head quarters carry out, under His Excellency's orders, frequent tours of inspection at the frontier. Lieutenant-General Sir Charles Burtchaell, the Director of Medical Services, is at the present moment making an extensive tour for the above purpose. . . . The Hon. Mr. Hailey, Chairman of the Executive Committee of the Red Cross Council, is now at the front personally inspecting various hospitals and hospital arrangements. It is needless to add that the Red Cross Society have given and are giving every help in their power, and that additional comforts for the troops are being systematically forwarded to the front by the 'Comforts for Troops' organization."

RECIPROCITY WITH CANADA.

THE Medical Council of Canada, at its meeting at Ottawa in June, received notification of the decision of British Columbia to relinquish its local professional examination for licence to practise in favour of the examination set up by the Canadian Medical Council. The means to be taken to establish reciprocity between Canada and the United Kingdom were further discussed, and Dr. R. W. Powell, Registrar of the Dominion Medical Council, was empowered to instruct standing counsel to draw up the necessary amendment of the Canadian Act, and to submit it to all the provinces in order to obtain consent for fresh legislation. Until reciprocity of practice has been established with every province of Canada, so that virtually reciprocity has been established with the Dominion itself, Part II of the British Medical Act, 1886, cannot be extended to the Dominion, and until this has been done by an Order of His Majesty in Council, the General Medical Council has no power to recognize the licence of the Dominion Medical Council. It follows that if the College of Physicians and Surgeons of British Columbia, with which province the General Medical Council in this country has not as yet been able to establish reciprocity, discontinues its own provincial examinations in favour of those conducted by the Dominion Medical Council there will still be no qualification granted in the province which can be registered by the General Medical Council until Part II of the Medical Act has been extended to the Dominion as a whole. The province of Saskatchewan, with which the General Medical Council has reciprocity, abandoned its own provincial examinations in favour of those of the Dominion Medical Council a few years ago, but soon afterwards changed its attitude and resumed its provincial examinations. The authorities of the General Medical Council would, we feel sure, welcome the arrival of the time when they would be in a position to extend recognition to the licence of the Dominion Medical Council.

SIR WILLIAM OSLER AT JOHNS HOPKINS.

THE *Bulletin* of the Johns Hopkins Hospital for July is an Osler number, for all but one of its 49 pages are devoted to appreciations, reminiscences, and descriptions of his manifold avatars. It is a memorial on which we see *votiva veluti depicta tabella vita senis.* Dr. Henry M. Thomas contributes memories of the development of the school and of the coming of Osler. Lewellys F. Barker describes him as chief of a clinic; W. T. Councilman gives an account of his early medical work; William G. MacCallum writes of him as a pathologist; W. S. Thayer as a teacher; Thomas R. Brown as he influenced the student; Thomas McCrae as he was in his relation to the patient; Louis Hamman tells of his share in the tuberculosis work of the hospital, and Henry Barton Jacobs of his relation to the tuberculosis crusade in Maryland. Thomas B. Futcher describes Osler's influence on the relations of medicine in Canada and the United States; Edward N. Brush his influence on other medical schools in Baltimore and his relation to the medical profession, and Hiram Woods his influence in building up the medical and chirurgical faculty. J. A. Chatard writes of his relation to the book and journal club, and Marcia Noyes of his influence on the library of the medical and chirurgical faculty of the State of Maryland. Henry M. Hurd contributes early reminiscences, and Howard A. Kelly describes Osler as he knew him in Philadelphia and at Johns Hopkins. Thomas R. Boggs speaks of him as a bibliophile, and Edward N. Brush treats of his literary style. A bibliography of his published writings, compiled by Minnie Dwight Blogg, librarian to the Johns Hopkins

Hospital, extends to fifteen large double column pages; it includes 730 titles of books and articles and represents Osler's output for forty-nine years (1870-1919). The text is illustrated with portraits at different dates down to 1913. It is a homage of which, as coming from his professional brethren, Sir William Osler may justly feel proud, and is a proof of the deep and lasting impression left by him on his colleagues at Baltimore.

TEMPORARY OFFICERS R.A.M.C. IN INDIA.

LETTERS we receive from India, and articles and correspondence in the Indian newspapers, show that there is very great dissatisfaction among temporary officers R.A.M.C. detained in that country. Those among them who were serving in Mesopotamia and were ordered home expecting to be demobilized here, but have been retained in India, are especially sore. The instruction, we understand, was that those medical officers in Mesopotamia noted for demobilization by the Ministry of National Service should be released as soon as the commanding officer of the unit could spare them. When stopped in India on their way home these officers, or many of them, after a period of uncertainty at the base, were sent into the war zone and attached to new units under the command of the Commander-in-Chief in India. It would seem only too probable that they have thus lost the claim to priority for demobilization which they had established in Mesopotamia, and have passed out of the sight of the War Office at home, being now under the control of the Commander-in-Chief in India. They have also been made to suffer in pocket. Their pay, received in rupees in India, has been affected by the increase of the exchange rate on England. The standard rate was 1s. 4d. the rupee; in October, 1918, it rose to 1s. 6d.; in May, 1919, to 1s. 10d. The result was that the rupee equivalent of the sterling pay, which was 18 rupees a day, sank to 16 rupees in October, and to 14½ rupees in May. Before October the pay, as has been said, was 18 rupees, and rations and quarters were supplied. After May, as we understand, the receipts of a temporary medical officer were, stated in sterling, 24s. a day, 4s. 6d. Army of Occupation bonus, and 1s. 9d. ration allowance, a total of 30s. 3d., which at the rate of 1s. 8d. is equivalent to 18 rupees a day, the same as before October, 1918; but quarters, fuel, and light are not provided, and the ration allowance in money does not go very far. At the same time the purchasing power of the rupee in India has decreased. The Lieutenant-Governor of Bihar and Orissa, in receiving a deputation of the secretariat recently, freely admitted that this was so, and described the recent rise in prices as unprecedented. It is true, of course, that the credit in England for a remission home, whether in sterling or in rupees, is not affected, but the increased cost of living in India must make the margin for remission smaller, and of course, as every one here knows, the rise in prices makes the purchasing power of the £1 half or less than half what it was. The position of these officers seems all the harder because the officers of the Government of India, paid on a rupee basis, are receiving the same number of rupees as before, though their position with respect to remissions to this country is rendered more favourable by the rise in the rupee rate in London. The ruling that temporary officers R.A.M.C. should be paid the reduced number of rupees equivalent to the increase in the exchange on London was, it is stated, made by the Military Accountant-General, Simla, so that it would appear that the War Office was responsible for this unprecedented piece of shabby economy at the expense of officers anxious to resume the civil practice of their profession at home but retained in India owing to the embarrassments of the Government in that country. This is now to be remedied, as the Secretary of State for India stated in the House of Commons last week that he had arranged with the War Office that the sterling pay of temporary officers R.A.M.C. shall be converted into rupees at the fixed rate of 1s. 4d., the rate at which, he added, the pay of non-commissioned officers and men has throughout been converted. Mr. Montagu did not say that this arrangement would have retrospective effect to October, 1918, but we hope we may assume it will. The War Office appears to be within its legal rights in detaining temporary medical officers in the service until the expiration of the contracts into which they have entered; in all probability the majority of the contracts run until the end of the present emergency. By the Act of Parliament passed last November the present emergency continues until the day on which the war shall be declared by Order in Council to be at an end. It was hoped, and indeed, expected, that the date would be August 4th, but the Order has not been issued, and we are therefore bound to assume that, technically and legally, the emergency still continues. The reasons given for detaining officers who left Mesopotamia in the expectation of coming straight home to be demobilized, were first, the mutinous outbreaks in India, and afterwards the war with Afghanistan. Peace was declared with Afghanistan last week, and though there is, no doubt, much political unrest in India, there is no rebellion. The War Office may now properly be called upon to bring home for demobilization Territorial, Special Reserve, and temporary officers, both those who were serving in Mesopotamia and those who have served in India.

TRAINING THE CRIPPLED.

THE Clinic for Functional Re-education of Soldiers, Sailors, and Civilians opened in New York a year ago is a large and well appointed institution affiliated with the Cornell Medical College. The clinic, which was fortunate in being able to obtain suitable buildings, comprises hydrotherapeutic, electrotherapeutic, and *x*-ray departments mechanical apparatus designed by Professor Tait McKenzie of the University of Pennsylvania, who during the earlier years of the war did so much for the British soldier, and Professor E. A. Bott of Toronto, as standardized for use in the medical department of the United States army, and a department for special therapeutic exercises and games, and for local massage. There are also workshops, rest and writing rooms, and an outdoor garden, where many of the exercises can be given. There are three wards for patients unable to walk, and an operating room for secondary operations. Treatment is offered free to the poor, but hospital patients referred by the city authorities, or accident insurance companies, by the War Risk Insurance Bureau, or similar organizations, are charged the same rates for board, operation, or treatment, as those organizations are accustomed to pay other hospitals and dispensaries in New York. We have received a reprint of the address delivered by Professor Tait McKenzie at the opening meeting, in which he described many ingenious types of apparatus for the restoration of function, such as a finger board for abduction of stiff fingers, another for stretching contractions and flexions of the fingers, appliances for exercising the wrist and fingers, and various devices for helping a man wearing an artificial leg to learn to walk. In training a man he first learns to balance himself, and this, it is said, can be done by suspending him by a belt under the arms, working from an overhead trolley, on the same principle as the aërial transporter crutch in use at the Prince of Wales Hospital, Cardiff, to help men who have lost both lower limbs to put on their artificial limbs. When he is beginning to walk the patient is induced to discard crutches and practise between parallel bars; next he learns to walk on a smooth level surface with one stick only, and to help him to learn to clear obstructions he practises walking over a ladder with widely spaced rungs laid horizontally, supporting himself on parallel bars at a convenient height. Then he walks through soft sand or on uneven ground, and up and down inclines and on a balanced beam. Finally, he may learn to play games by

means of special attachments for arms and legs such as have been designed by Professor Bott to allow the playing of tennis, billiards, and even bowls. The general principles are the same as those which have guided the method of training adopted at the hospital at Cardiff, but it is interesting to note individual differences in the manner of obtaining the same ends.

THE MONTGOMERY LECTURES.

WE publish this week the first of two Montgomery lectures delivered at Trinity College, Dublin, by Dr. Gordon Holmes. Robert John Montgomery, M.A., M.B., F.R.C.S.I., who died in 1912, left money to the Board of Trinity College and the Council of the Royal College of Surgeons in Ireland jointly to establish the Mary Louisa Prentice Montgomery Lectureship in Ophthalmology. The bequest took effect in 1915, but the war interfered a good deal with the arrangements. The lecturer is appointed for one year, but is eligible for reappointment year by year for a period not exceeding five years; he will receive about £175 a year. For the first five years the appointment is in the hands of the Board of Trinity College, Dublin, for the next five years in those of the president, vice-president and council of the Royal College of Surgeons in Ireland. The lecturer is required to give one or more formal lectures in each year to members of the medical profession and medical students in Dublin upon a subject connected with ophthalmology, to which he has given attention during the previous year. Dr. R. J. Montgomery was himself on the staff of St. Mark's Ophthalmic Hospital, Dublin, now the Royal Eye and Ear Hospital.

TUBERCULOSIS COLONY IN CUMBERLAND.

THE Cumberland County Council are to be congratulated on their enterprise in the purchase of Englethwaite Hall, near Cotehill, about seven miles south of Carlisle and close to a railway station on the Midland Railway. The site cost £5,000, and it is intended forthwith to convert it into a colony for tuberculous patients. The mansion stands in 32 acres of ground. There are four reception rooms and twelve bedrooms, and there is a smaller house in the grounds. There is also an excellent ballroom close to the mansion, which will form a suitable recreation room. The place will be run as a colony on the same lines as that at Papworth, Cambridge. It will be different from a sanatorium and do away with an unsatisfactory feature of sanatorium treatment by providing occupation. Men will be put to various trades as nearly approaching their own as possible. The County Council has authorized the purchase of the necessary furniture and fittings, and it is hoped that the new institution will soon be in working order.

Medical Notes in Parliament.

War Pensions Administrative Provisions Bill.—On the third reading of this measure, on August 8th, Sir James Craig, Parliamentary Secretary to the Ministry of Pensions, said, in reply to various criticisms, that the policy of transferring ex-service men for training from the Ministry of Pensions to the Ministry of Labour would be continued, but it should be clearly understood that no pensioner left the auspices of the Ministry of Pensions until he was certified by the medical staff of the Ministry to be fit to undertake the training the Ministry of Labour proposed to give him. Six very large and suitable industrial centres were being established. Far from the Ministry of Pensions parting with a man before he entered the industrial world, it was the desire and duty of Sir L. Worthington Evans to see that the responsibility of passing men on to the Ministry of Labour rested with the Pensions Department medical advisers. Mr. Hogge had asked whether, when a permanent pension had been awarded, it would be possible to allow a man who was dissatisfied to appeal. All that could be said at present was that there was a possibility of this being done. The matter had not been specifically discussed between himself and the Minister of Pensions, but there appeared to be no administrative difficulties in the way. The appeal was one on assessment. It really meant an appeal to a rather superior medical board. He would submit to Sir L. Worthington Evans the request that the new appeal tribunals should be made available for rehearing the cases which had already been tried by the existing appeal tribunals; but he did not think that this was possible. Mr. Hogge, interpolating, asked Sir James to bear in mind that the new appeal tribunals would not operate until the present measure had been passed into law; and that no one who had a pension prior to that date would have a right of appeal to the new tribunals. Sir James, who had previously expressed the opinion that the new appeal tribunals could not be fairer or more practical than those now existing, said he would leave the door open, in the sense that he would represent to the Minister what had been said; but he did not wish to be thought to favour the suggestion. The bill was then read a third time.

Rupee (Rate of Exchange).—Sir A. Fell asked the Secretary of State for India, on August 6th, if the pay of the officers of the Royal Army Medical Corps and of the nursing sisters serving in India was now paid to them at a rate of exchange of a rupee for 1s. 3d. of pay, whilst it was paid at 1s. 4d. when they went to India; and if, in addition to this actual loss of pay, the purchasing power of the rupee had declined; if non-commissioned officers and men were paid at the same rate of exchange; and what was going to be done to remedy this hardship. Mr. Montagu replied: Assuming that the hon. member refers to temporary officers of the Royal Army Medical Corps and to temporary nurses of the Imperial Nursing Service, I have now arranged with the War Office that their sterling pay shall be converted into rupees at the fixed rate of 1s. 4d. The pay of non-commissioned officers and men has throughout been converted at the fixed rate of 1s. 4d. the rupee.

Pay of British Officers in Indian Army.—Mr. Montagu, in answer to Colonel Yate, on August 8th, said he hoped to be in possession within a fortnight of the proposals of the Government of India for a permanent revision of the rates of pay for British officers in the Indian Army, and he would do all he could to expedite a final decision when they reached him. Pending that decision the Government of India was making recommendations, which he hoped to have before him in a few days, for a scale of temporary allowances to hold good until the permanent scales were introduced.

Medical Arrangements for the North-West Frontier Operations.—Viscount Wolmer asked the Secretary of State for India whether there had recently been a serious outbreak of cholera among the troops of the 6th Indian Brigade at Ali Musjid, North-West Frontier, whether the medical personnel of the brigade was not up to the establishment strength, and whether there was a breakdown in the medical arrangements and an insufficient supply of anti-cholera vaccine. Colonel Yate asked what arrangements had been made for the health and comfort of the troops of the North-West Frontier, and what action was being taken with regard to the allegations recently published as to defects in hospital management and supply. In a written reply, on August 5th, Mr. Montagu reproduced the communiqué issued by the Government of India to which attention is drawn elsewhere (p. 213), and added that a specific inquiry was being made into each definite allegation as to defects in hospital management and supplies brought to his notice.

Clinics for Neurasthenic Ex-Service Men.—In a written reply to Major Prescott, on August 7th, Sir James Craig stated that it was hoped that soon a central neurological institution would be established in each region, available for both in- and out-patient treatment. It was recognized that in a great number of neurasthenic cases in-patient treatment was not required, and a number of clinics were being established in various parts of the country where expert out-patient treatment would be given. It was confidently expected that very soon ample accommodation would be available for the efficient treatment of these cases.

Hospital Ships at Archangel.—Mr. Churchill, in a written answer to Mr. Jodrell, on August 7th, stated that at that time there were no British women nurses in the port and town of Archangel. A matron and thirteen sisters were, however, on duty in a hospital ship which was stationed at Archangel from November 2nd to June 2nd last when the ship returned with them to Great Britain. The hospital ship went back to Archangel on July 7th with one matron and ten sisters, and left again on July 28th with the nursing staff on board. Two hospital ships were being used to evacuate patients from the military hospitals in North Russia.

Royal Army Medical Corps Appointments.—Captain Guest, in a written answer to a question by Major Lyle on July 31st, stated that the promotion of officers to the senior ranks of the Army Medical Service was made by the Army Council on the recommendation of a selection board, composed of major-generals of the Army Medical Service.

Medical Benefits under National Health Insurance.—Major Astor, replying to Mr. Godfrey Locker Lampson, on August 11th, said that the question of what changes, if any, in the existing medical benefits under the Insurance Acts would be proposed for 1920 had not yet been decided. Various improvements in the conditions of service, and the possible establishment of some of the additional matters that were suggested in the estimates of 1914 had been under consideration at the Ministry and in conference with the practitioners, and would be further discussed with the new Consultative Councils, with the Insurance Committees, and with the approved societies, but these matters were not yet in a sufficiently advanced state to admit of any precise statement that day.

HONOURS.

THE following are the statements of services for which the decorations announced in the *London Gazette* of February 15th, 1919 (BRITISH MEDICAL JOURNAL, February 22nd, 1919, p. 227), were conferred:

Military Cross.

Temporary Captain (acting Major) John Richard Percy Allin, 90th Field Ambulance, R.A.M.C.

For conspicuous gallantry and devotion to duty in charge of bearers on September 29th, 1918, and following days. On the 29th, during the advance, he made his way through Lehaucourt to Le Tronquay, despite severe shell and machine-gun fire. He promptly organized the evacuation of the wounded, and by his fine example and energy secured the rapid evacuation of over 250 casualties.

Captain Alan Fenton Argue, C.A.M.C., attached 87th Canadian Battalion, Quebec Regiment.

For conspicuous gallantry and devotion to duty, September 2nd–3rd, 1918, at the Dury-Arras sector. During the attack he accompanied the battalion during its advance under very heavy fire, and established his first aid post in a trench close to the front line reached by the battalion, and continuously during the day and night worked without any rest and under constant fire. Later he went to the assistance of a wounded officer under heavy shell fire, dressed his wounds, and remained with him until he died in his arms. Throughout he behaved admirably.

Temporary Captain (acting Major) Basil William Armstrong, R.A.M.C., attached 100th Field Ambulance.

For conspicuous gallantry and devotion to duty. During the fighting around Forenville and Seranvillers on October 8th, 1918, he was in charge of the bearers clearing casualties of an infantry brigade. He constantly visited all the regimental aid posts, having to pass along roads and tracks subjected to very heavy machine-gun fire throughout the whole day. All his work was done in the open, and by his energy, disregard of danger, and skilful organization he succeeded in evacuating all the wounded in a very short time.

Captain Frederick Grant Banting, 13th Field Ambulance, C.A.M.C.

Near Haynecourt on September 28th, 1918, when the medical officer of the 46th Canadian battalion was wounded, he immediately proceeded forward through intense shell fire to reach the battalion. Several of his men were wounded, and he, neglecting his own safety, stopped to attend to them. While doing this he was wounded himself, and was sent out notwithstanding his plea to be left at the front. His energy and pluck were of a very high order.

Captain James Harold Blair, C.A.M.C., attached 72nd Battalion Brit. Col. R.

For conspicuous gallantry and devotion to duty during the Bourlon Wood operations before Cambrai from September 27th to October 1st, 1918. During the attack on September 27th he rushed ahead under heavy fire and rendered immediate medical attention to all wounded in the vicinity. During the attack on the 29th he followed the attacking troops closely and dressed the wounded as he went forward, and formed the enemy prisoners into stretcher parties. Immediately after the town of Sancourt was captured he established a regimental aid post there, and continued to work under heavy fire. His work throughout was of the highest order.

Captain Edwin John Bradley, R.A.M.C.(S.R.), attached 1/3rd (North Midland) Field Ambulance.

He was in charge of the bearers during the attack on the St. Quentin Canal on September 29th, 1918, and displayed great gallantry and initiative. He went forward and sought a position for an advanced dressing station in Bellenglise when it was being heavily shelled by the enemy, and finally organized collecting and relay posts on a route farther north. His dispositions were most skilful, and the rapid evacuation of the wounded was mainly due to the exertions of this officer.

Captain Miles Gillespie Brown, C.A.M.C., attached 85th Canadian Battalion, Nova Scotia R.

For conspicuous gallantry and devotion to duty during the Bourlon Wood operations before Cambria. On September 27th, 1918, he advanced with the attacking wave from the assembly position, and attended wounded in the open under constant machine gun and shell fire. He established his regimental aid post in an open trench, no other place being available. Later, after his assistant was killed beside him and his sergeant wounded, he continued his work with absolute coolness and outstanding devotion to duty. He behaved splendidly throughout, and saved many lives.

Captain Edwin Thomas Cato, A.A.M.C., attached 1st Battalion Australian Infantry.

In the operations near Hargicourt from September 18th to 21st, 1918, he showed untiring energy and devotion to duty in his care of the wounded, particularly on September 21st, when, in order to give early attention, he established his aid post in an open trench which was under shell fire and moved about the area continually dressing wounded in shell holes and open country. By his disregard for personal safety and his cheerful confidence he set a splendid example to all.

Captain Herbert Troughton Chatfield, R.A.M.C.(S.R.), attached No. 6 Field Ambulance.

For conspicuous gallantry and devotion to duty from September 27th to September 29th, 1918, when in charge of stretcher-bearers. He frequently led his parties through machine-gun and shell fire to bring in wounded. He succeeded in keeping in close touch with the infantry throughout the advance to and the crossing of the St. Quentin Canal near Noyelles. By his fine conduct and example he was instrumental in saving many lives.

Temporary Captain Thomas Clapperton, 141st Field Ambulance, R.A.M.C.

For conspicuous gallantry and devotion to duty during the attack on the Hindenburg Line on September 29th, 1918. Throughout the day he repeatedly conducted bearers to the most exposed parts of the line to search for casualties. Though his advanced bearer post at Berthaucourt was heavily shelled, he succeeded by his promptitude and energy in getting his wounded away without further casualties. His fine work was the means of saving many lives.

Captain (acting Major) Hubert Roy Dive, 1/2nd Mounted Brigade Field Ambulance, R.A.M.C., attached 230th Field Ambulance.

On September 21st, 1918, at Templeax le Guerard, when in charge of evacuation of casualties from the front line, he worked incessantly without rest under intense shell fire, exposing himself in the most fearless manner when bringing in casualties. He showed a very fine example of devotion to duty, and the successful evacuation was entirely due to his personal gallantry and initiative. He has been superintending the evacuation from the front line continuously since September 2nd, and during all this period has shown the greatest zeal and resource.

Temporary Captain Robert Donald, R.A.M.C., attached 35th Field Ambulance.

For conspicuous gallantry and devotion to duty on September 27th, 1918, during the advance on Epinoy. He dressed cases in the open all day under fire, and established a chain of aid posts as the infantry advanced. It was solely due to his unflagging zeal, his initiative, and absolute disregard for personal safety that a most difficult front line evacuation was carried out with the utmost rapidity.

Temporary Captain Alexander John D'Souza, I.M.S., attached 92nd Punjabis (Egypt).

For distinguished service and marked gallantry on September 19th and 20th, 1918. On September 19th, near El Medjel, when a report came back that an officer was severely wounded, he at once went forward under very heavy machine-gun fire to give immediate attention. His efforts for the wounded were unceasing, and he displayed a devotion to duty deserving of great praise.

Captain Lewis Hayes Fraser, C.A.M.C., attached Royal Canadian Horse Artillery.

On October 10th, 1918, near Le Cateau, when a battery commander was reported badly wounded at the observation post, this officer went forward some 1,500 yards through heavy fire to attend him. He arrived at the observation post just after the enemy barrage came down on it. Having attended to the battery commander, he went out of the trench and crawled about under the heavy barrage for nearly an hour attending to wounded infantry. He showed great gallantry and devotion to duty.

Temporary Captain William Balfour Gourlay, R.A.M.C. (North Russia).

Throughout the period October 7th to 15th, 1918, he showed exceptional devotion to duty in the care of the sick and wounded in the village of Borok, under frequent shell fire and several infantry attacks. His hospital at Borok had twice to be moved owing to fires caused by shelling; and though worn out by want of sleep and hard work he attended to the evacuation of the wounded when the troops moved back from the village, marching with them for a long distance and helping to ease them over bad roads under difficult circumstances. He set a fine example throughout of unselfish endurance in the performance of his duties.

Temporary Captain Norman Frankish Graham, R.A.M.C., attached 6th Battalion London Regiment.

Near Maricourt, during the operations of August 26th, 27th, 28th, and 31st, 1918, this officer showed the greatest courage and devotion to duty. On three occasions, when the battalion to which he was attached moved forward, he immediately followed behind the battalion and established his regimental aid post close up to the line, tending and superintending the collection of wounded under very heavy shell fire. He so organized the stretcher-bearer parties, largely using prisoners for this task, that the wounded were evacuated with a minimum of delay and discomfort. He was twice slightly wounded, but carried on.

Captain Gerald Wallace Grant, 4th Field Ambulance, C.A.M.C.

For conspicuous gallantry and devotion to duty near Vis-en-Artois, August 27th–28th, 1918. He was in charge of fifteen squads of bearers, and throughout the whole operations superintended the clearing of casualties under almost continuous fire from the area allotted to him. On the 28th he led his squads in advance of the infantry position, and under machine-gun fire succeeded in removing from shell holes several badly wounded men to the collecting post, whence they could be evacuated. He set a splendid example to those under him.

Temporary Captain Richard Perrott Hadden, 103rd Field Ambulance, R.A.M.C., attached 152nd Brigade, R.F.A.

For conspicuous gallantry and devotion to duty when some transport came under heavy howitzer fire near Tenbrielen on October 8th, 1919. He went straight to the place through heavy shelling to attend to a wounded man, and by his prompt action and disregard of danger, probably saved the man's life.

Captain Albert Robert Hagerman, C.A.M.C., attached 7th Canadian Battalion, Manitoba R.

For conspicuous gallantry and devotion to duty during the Bourlon Wood operations before Cambrai. On September 27th, 1918, he followed close behind the attacking infantry and established a regimental aid post in the open under heavy shelling and dressed wounded under heavy machine-gun fire. On September 29th he established a dressing station in a forward trench, and for two days he worked unceasingly under shell fire in this position, dressing hundreds of wounded. He did admirable work.

Captain James Mann Henderson, A.A.M.C., attached 12th Battalion Australian Infantry.

During the attack near Jeancourt on September 18th, 1918, he established his regimental aid post immediately in rear of the jumping-off place, and attended to the wounded of his and of a supporting battalion under heavy shell fire in an exposed position. As the attack progressed he moved forward and treated large numbers of casualties in the open. By his energy, disregard of danger, and clever organization, he relieved a great deal of suffering, and throughout set a splendid example to those under him.

Temporary Captain Alexander Hunter, R.A.M.C., attached 63rd Division Engineers.

During the operations on Niergnies on October 8th, 1918, whilst attached to the advanced dressing station, when the advanced dressing station was being heavily shelled he went out to attend to some wounded. On his way he was knocked down by the explosion of a gas shell, but, though severely burned, he continued to attend to the wounded, displaying a remarkable coolness and utter disregard to personal danger. He refused to be evacuated, and remained on duty until relief.

Temporary Captain William Boyd Jack, R.A.M.C., attached 5th Battalion Leicester Regiment (T.F.).

For conspicuous gallantry and devotion to duty during the attack on Pontruet on the morning of September 24th, 1918. His regimental aid post was situated in a valley which was shelled consistently with gas and high-explosive shell. He had no dug-out, and his work was entirely in the open. From 5 a.m. till 3 a.m. the following morning he worked unceasingly, entirely regardless of danger, and his fine conduct saved many lives.

Temporary Captain Matthew James Johnston, R.A.M.C.

During an air raid on St. Omer on the evening of May 30th, 1918, four men had been buried at the Caserne d'Albret in the débris of part of the building which had been destroyed by bombs. He arrived immediately in an ambulance, and, in spite of the fact that the enemy planes were still overhead, set to work at once to effect a rescue. This had to be done in the dark, but the men were got out alive, and only one of them subsequently died. Other bombs were dropped near by whilst the work of rescue by this officer was still proceeding. On this, as on many other similar occasions, the conduct of this officer was very gallant.

Captain Charles Terrell Lewis, C.A.M.C., attached 10th Brigade Canadian Field Artillery.

For gallantry and devotion to duty. On August 29th, 1918, during the operation along the Arras-Cambrai road, two gun pits were set on fire by hostile shells. An ammunition dump was exploded and several men wounded. He hastened to the spot and dressed the wounded and removed them to a dressing station. Throughout the whole operations he was untiring in his efforts to afford immediate attention to the wounded, many times under severe fire.

Temporary Captain Charles William Berry Littlejohn, 140th Field Ambulance, R.A.M.C.

For great gallantry and initiative in the operations south-east of Ypres from September 28th to October 4th, 1918. During this period he was in command of forward stretcher bearers, and it was solely due to his energy and dash that close touch was kept with battalions and their wounded promptly evacuated. He exposed himself freely to sniping, machine-gun, and shell fire to get at the wounded of not only his own brigade but of other divisions, and by his fine conduct saved many lives.

Temporary Captain Alfred Mason, R.A.M.C., attached 229th Field Ambulance.

Near Moislains and Hargicourt, September 2nd to 25th, 1918. While in charge of the bearer division working in front of the advanced dressing station he was unceasing in his efforts on behalf of the wounded. Although his area was on many occasions subjected to very severe shell fire, and, although he was for some days himself ill, he succeeded through sheer gallantry and devotion to duty in maintaining touch with the regimental aid posts continuously during the advance, thereby securing the rapid evacuation of the wounded. His work was admirable.

Captain Harry Clarke Moses, C.A.M.C., attached No. 5 Field Ambulance.

For conspicuous gallantry and devotion to duty in charge of the advanced post of the right sector during operations round Neuville Vitasse, Wancourt, and Cherisy, August 26th to 27th, 1918. He was exposed to frequent enemy shelling, bombing, and machine-gun fire from aeroplanes, and when a shell exploded among a number of wounded awaiting evacuation he directed the adjustment of the masks on the wounded and succeeded in protecting them from all effects of the gas.

Lieutenant William Percival Nelson, R.A.M.C.(S.R.), attached 1/28th Battalion London Regiment.

At Rumillies, on October 8th, 1918, for gallantry and devotion to duty. During a very severe bombardment of both artillery and machine guns he constantly went out to the help of the wounded, attending them with utter disregard for danger, and was the means of saving several lives and alleviating a great deal of suffering. He has at all times set a striking example by his fearlessness and devotion to duty.

Captain John Archibald Nicholson, R.A.M.C.(S.R.), attached 1st Battalion Seaforth Highlanders (Egypt).

For most gallant conduct and devotion to duty near Tabsor on September 20th, 1918. He moved about in the open under a heavy machine-gun fire to dress the wounded and bring them to a place of safety. Though casualties were very heavy, he continued to perform his duties with the greatest calmness and disregard of danger. He set a very fine example of devotion to duty and showed great courage.

Captain Kenneth Claud Purnell, A.A.M.C., attached 11th Brigade Australian Field Artillery.

For conspicuous gallantry and marked devotion to duty during the attack on the Hindenburg Line, south of Vendhuile, on September 29th, 1918. He dressed the wounded under very heavy shell fire, and organized a stretcher party and conducted them to the battery positions, and by his personal and untiring efforts assisted in getting them to the nearest dressing station, a distance of about 1,000 yards, and still under heavy fire. Throughout the day he worked splendidly.

Captain Allan Melrose Purves, A.A.M.C., attached 2nd Tunnelling Company, Australian Engineers.

On September 29th, 1918, during the operations against the Hindenburg Line, in the neighbourhood of Bellicourt, he formed an aid post in a forward position. At this point the enemy put down a very heavy barrage, which lasted about six hours and caused heavy casualties amongst the road party and the infantry in the vicinity. The whole of this time he attended to the wounded in the open, showing great gallantry and devotion to duty, and undoubtedly saved many lives.

Temporary Captain Edward Rogerson, R.A.M.C., attached 2nd Battalion King's Royal Rifle Corps.

For gallantry and devotion to duty east of Maissemy on September 18th, 1918, and during the operations of September 24th–28th. On September 18th he attended to and bandaged wounded men under heavy machine-gun fire. His actions undoubtedly saved many lives. During the heavy shelling of our positions on September 24th–25th he was conspicuous for his utter disregard of danger while carrying out his duties, and throughout the operations he set a splendid example to those under him.

Temporary Captain James Scott, R.A.M.C., attached 12th Battalion Manchester Regiment.

On October 12th, 1918, in front of Neuvilly, under heavy and accurate shell fire out in the open, he dressed the wounded without cessation. His cool courage under fire and his speed and skill, combined with his energy in keeping the stretcher-bearers going and in working eight enemy squads, saved many lives. He worked untiringly, and showed such spirit as inspired all who came near him.

Temporary Captain Thomas McCall Sellar, R.A.M.C., attached 1/18th Battalion London Regiment.

During the period August 28th to September 6th, 1918, the battalion was continually in offensive action. Most of the stretcher-bearers became casualties. Throughout this time he worked with such untiring energy and marked gallantry that the regimental aid post was constantly in touch with the attacking troops, and wounded were got back to the aid post by him continually organizing and leading forward small parties of bearers under heavy fire.

Captain (acting Major) Arthur Leonard Shearwood, R.A.M.C. (S.R.), attached 33rd Field Ambulance.

For conspicuous gallantry and devotion to duty on September 27th–28th, 1918, during and after the attack on Oisy-le-Verger and Epinoy, when in charge of the evacuation of the wounded from the divisional front by motor ambulance. He worked for thirty-six hours unceasingly, visiting forward positions and establishing car posts, under shell fire. His initiative and skill in carrying out these dispositions and his complete disregard for personal danger and fine example to all those under his command, saved many lives, and rendered the evacuation a complete success.

Captain Clifford Halliday Kerr Smith, R.A.M.C.(T.F.), attached 1/4th Battalion King's Own Scottish Borderers (T.F.).

During the enemy attack on Moeuvres on September 17th, 1918, this officer, when informed that there were many serious cases lying out requiring immediate attention, went forward in face of a very heavy artillery, rifle, and machine-gun fire, and gave them his personal attention. As those urgent cases could not have been brought to the regimental aid post in time for the necessary attention, this officer, by his prompt action and fearless devotion to duty, was undoubtedly the means of saving many lives of men in this battalion.

Captain George Alexander Smith, C.A.M.C., attached 47th Canadian Battalion, West Ontario Regiment.

For conspicuous gallantry and devotion to duty during the operations in front of Cambrai from September 27th–29th, 1918. He followed the battalion closely throughout the operations, showed great energy, and dressed many cases under heavy shell fire, working out in the open with practically no shelter. He set a very fine example to those under him.

Captain John Stirling, R.A.M.C.(S.R.), attached Head Quarters, 112th Brigade, R.F.A.

On August 26th, 1918, north of Maricourt, hearing that D/112th Brigade was being heavily shelled by the enemy, he immediately went to the battery and attended the wounded. Again, near Moislains, on September 9th, 1918, when battalions were suffering casualties from enemy long-range guns, he went to them and attended their wounded. His gallantry and devotion to duty on numerous occasions have been most marked.

Captain Joseph Townsend Stirling, 11th Field Ambulance, C.A.M.C.

For conspicuous gallantry and devotion to duty. During the attack on Bourlon Wood on September 27th, 1918, he dressed wounded in the open in the vicinity, under heavy shelling and machine-gun fire. Again on September 29th, when one of his men was killed and several others seriously wounded, he went to their assistance, got them dressed, and carried to safety.

Captain Richard Chapman Weldon, C.A.M.C., attached 2nd Canadian Motor Machine-Gun Brigade.

While in action east of Arras on August 29th, 1918, at Jig-Saw Wood and Artillery Hill, he was in charge of the regimental aid post, where he showed great gallantry and devotion to duty. The heavy and continuous shell fire made the work at the aid post both heavy and difficult, entailing constant work for thirty-six hours without rest.

Temporary Captain George Burkett Wilkinson, 28th Field Ambulance, R.A.M.C.

On the night of October 3rd–4th, 1918, at Waterdamhoek, he was in charge of advanced dressing station. Every one had left the village on account of intense shelling. As wounded continued to come in he carried on dressing and evacuating wounded regardless of the risk he ran till the advanced dressing station was closed down. He showed great courage and devotion to duty.

England and Wales.

Treatment of Disabled Soldiers and Civilians in Wales.

The Cardiff Mental Hospital at Whitchurch was lent to the War Office at an early stage of the war, and Dr. E. Goodall, medical superintendent, became commandant of the military hospital, which was known as the Welsh Metropolitan War Hospital. The hospital became an important centre for military orthopaedics, but it is now desired that it should revert to its original purpose. The Ministry of Pensions, however, seems to have assumed that it would be able to take over the hospital for its own purposes, and invited Colonel Goodall to act as medical superintendent under the Ministry of Pensions. The Managing Committee of the hospital, however, appears altogether indisposed to agree to the Ministry's proposal, and has adopted a resolution requesting the War Office to remove its patients and to hand over the hospital to the committee

by December 1st next. At the quarterly meeting of the South Wales and Monmouthshire Joint (Disablement) Committee of the Ministry of Pensions last week the chairman said that the proposal to take over the hospital at Whitchurch as a pensions hospital had been made without consultation with them, and a resolution of protest was adopted. A further resolution was passed urging the Ministry of Pensions immediately to erect the necessary additional accommodation for orthopaedic patients at the Rookwood Hospital for the Disabled at Llandaff. As has already been announced, the Rookwood estate, which comprises thirty acres, with a mansion house, on the outskirts of Cardiff, was purchased by Mr. and Mrs. Laurence Phillips, and presented for the use in the first place of pensioners, and afterwards, according to the scheme set out by Sir John Lynn-Thomas, for the treatment of orthopaedic cases in civil life, as a part of the Welsh National Medical School. The Joint Disablement Committee of South Wales and Monmouthshire has recommended its own dissolution and the transfer of responsibility for the treatment of disabled men to the Commissioner of Medical Services of the Welsh Region, Ministry of Pensions.

Increased Remuneration for Doctors at London School Clinics.

The London County Council has raised the remuneration of doctors, surgeons, and aural and dental anaesthetists employed at school treatment centres and hospitals in connexion with the medical treatment of children attending elementary schools to a scale of £70 a year (that is, £1 11s. 6d. for one half-day session weekly). Under the agreements with the committees of the various centres, which have been in force since 1910 until the early part of the present year, the allowance in respect of medical service was at the rate of £50 a year for one half-day a week (that is, £1 2s. 9d. a half-day). Certain of the committees, however, found difficulty in obtaining adequate service at these rates, and in April last the Council agreed to increase the amount to £60 a year (£1 7s. 3d. a half-day). Representations were then made by a deputation from the Metropolitan Counties Branch of the British Medical Association, urging that the remuneration should be further increased in order that the payments made by the Council might conform to those made by other authorities, with the result that at its last meeting before the summer recess (on July 29th) the Council agreed to increase the remuneration to £70 a year, the increase to take effect as from April 1st, 1919, the beginning of the official year. With regard to the remuneration of dentists employed in connexion with school dental inspection and treatment, the Council decided in January last to raise the remuneration to £50 a year for one half-day's service a week, and further decided in June that where a dentist had been employed by the Council for four or more years and was certified as being a dentist whose services it was desirable to retain he should be paid at the rate of £55 a year.

Ireland.

Dublin Hospitals.

The grave position in which the Richmond, Whitworth, and Hardwicke Hospitals have been placed, due to the Government's refusal to relieve their present distress, is unchanged. The institutions continue their present hand-to-mouth existence, only paying patients being received. The reply of the Chief Secretary to the Town Clerk, intimating that the Government cannot give any hope of financial assistance, makes the outlook even more gloomy. That the closing of the hospitals, which must ultimately be brought about unless the Government changes its present attitude, constitutes a public scandal, is the view of those most deeply interested in their work. The critical position of most of the city hospitals is shown by the following overdrafts in their respective accounts on May 30th, 1919:

Meath Hospital	£15,024
Richmond, Hardwicke, and Whitworth Hospitals	12,654
Royal Victoria Eye and Ear Hospital	6,742
Coombe Lying-in Hospital	6,303
Steevens's Hospital	5,924
Royal Hospital for Incurables	5,497

Mr. Barrington Jellett, chairman of the board of governors of the Richmond, Whitworth, and Hardwicke Hospitals, who resigned early in the present year, described the continued obduracy of the Government as a callous, cruel thing, which showed there was something very rotten in the administration. The refusal to increase the grant by a few thousand pounds to keep the hospitals open while money was being spent broadcast in less worthy causes was a grave scandal. The governors were appointed by the Government, who also approved of the appointments of secretary and matron, but notwithstanding the exercise of these powers, they refused to accept financial responsibility.

Surgeon Conway Dwyer, in an interview, stated that the hospitals open for the reception of cases from the city had, since the financial difficulties arose, been compelled to turn large numbers away. It had been the custom to treat country patients from all over Ireland, but they also had to be refused admission. In addition he pointed out that the House of Industry hospital constitutes one of the largest teaching medical centres in the city, and is attended by many students, and consequently great injury must ensue to medical education by the closing of these hospitals. A large number of nurses, many of whom had only entered on their period of training, have suffered a great loss, owing to their course being interrupted. The Richmond, Hardwicke, and Whitworth were, he said, the most thoroughly equipped institutions of their kind in the United Kingdom.

Alderman Captain McWalter, R.A.M.C., writes that it is clearly the duty of the Irish Chief Secretary, as head of the Irish Health Ministry, to provide the necessary funds; but he has refused. The alternative of putting the cost of the maintenance of the hospitals on the Dublin rates Dr. McWalter considers a serious step. The corporation may be satisfied to leave the working in the hands of the present governors, or it may insist on taking over the control itself. Such an action would have several important results. It would cost in the beginning, perhaps, £6,000 a year over and above the Government grant. In a short time this burden would increase to probably £12,000 a year, or an extra 2d. on the rates. Further, if the hospitals were on the rates the corporation would probably refuse to take country patients, and this would be a loss to the whole of Ireland. As much of the debt of the hospitals is said to be due to the treatment of sick and wounded soldiers, it is probable that they would no longer be received. The present cost of hospital treatment to the corporation, including the grants to all the hospitals, but excluding the cost of fever or tuberculosis hospitals, is about £7,000 a year. If once the corporation began to spend an extra £6,000 on any given hospital, the others would doubtless press their claims, and in a short time the expenditure on hospitals alone would be £30,000 a year. Dr. McWalter places the responsibility on the Government, which, he says, is drawing £39,000,000 a year out of the country; it ought not to be allowed to escape, but meanwhile the hospitals must shut and the poor must suffer.

India.

Reappearance of Epidemic Influenza.

The Government of India on July 11th issued a communiqué beginning as follows:

Outbreaks of influenza are reported from Bombay, Calcutta, Rangoon, and Madras. These outbreaks do not (save in the case of Bombay) appear to have attained serious dimensions. Nevertheless, they coincide in time with the preliminary outbreaks of last year; and though there is at present no reason to apprehend an epidemic of the same proportions, the measure of immunity conferred on any individual by a previous attack is uncertain.

The Government proposed that local governments should require the notification of ship-borne cases of pneumonia and of "violent influenza," and asked that it should receive intimation of all outbreaks in order that warning might be given to authorities and the public in neighbouring areas. Stocks of anti-influenza vaccine were being made ready, and surgeons and administrative medical officers were invited to ask for supplies to be ready on the spot in cases of emergency. The Sanitary Commissioner with the

Government of India has distributed a leaflet recommending as a preventive the douching of the nasal cavities and throat in the following manner:

(*a*) Dissolve one teaspoonful of salt in a pint of warm water; (*b*) gargle the throat with some of the solution; (*c*) place the remainder of the solution in a basin; (*d*) immerse the nostrils in the solution; (*e*) sniff slowly some of the solution up the nostrils until it is felt at the back of the throat; (*f*) raise the head from the basin, and allow the solution to flow from the nostrils into a bucket; (*g*) repeat this process two or three times. The whole ritual should be carried out four and five times daily.

The procedure, it is said, gave good results during the last epidemic in South Africa. The outbreak in Bombay has been the subject of a report by the municipal health officer, who speaks strongly on the insufficient water supply, overcrowding, and insanitary housing. Captain Malone, the specialist deputed by the Government of India to assist in dealing with the situation, is carrying on investigations at Parel Laboratory. Arrangements were being made to reopen roadside table dispensaries, and for establishing a spraying installation and disinfector. A chamber has been erected where ten persons can be treated at a time, and should its use prove useful other similar installations will be set up.

The St. John Ambulance Association.

The annual meeting of the St. John Ambulance Association in India was held at Simla on June 24th. The Viceroy, who presided, expressed his regret that, owing to the North-West Frontier campaign, it was not yet possible to turn the activities of the association entirely to peace conditions. He recalled that in August, 1916, with the help of the late Sir Pardey Lukis, and of the Red Cross and St. John Ambulance Association at home, an Indian branch of the Joint War Committee had been formed. The Indian Council had modified the organization so as to give fuller recognition to provincial centres, which now controlled their own finances and exercised a definite influence over the local organizations. The scope of the work would, it was hoped, be extended; it was, for example, proposed to consider the desirability of organizing classes in maternity work—a crying need; but if the work were to be extended greater financial support must be received. Acknowledgements were due to all those whose voluntary efforts had been given during the year, and the many medical officers who had given their time to instructing classes. Through the ample resources provided the Indian Joint War Committee had been able to take over complete responsibility for the widespread activities of the Red Cross in Mesopotamia, and also greatly to extend its work in the military hospitals in India. The forces in Mesopotamia owed much to the efforts of the Red Cross organization and the unstinted liberality of the Indian public. He believed that the records of the Indian Red Cross in Mesopotamia during the last year of the war would not compare unfavourably with that of the Red Cross anywhere else. The experience gained in Mesopotamia was of great value when the call came to enter on a fresh field of effort on the North-West Frontier; the Committee had found ready assistance from the Commander-in-Chief, who deputed a number of officers as Red Cross Commissioners, and fortunately it possessed considerable stocks in its Bombay dépôt. Large supplies were rapidly moved up and dépôts were opened at Rawalpindi, Peshawar, Kohat, Quetta, and Bannu, and the issue of comforts to hospitals and field units began within a fortnight of the commencement of hostilities. Looking to the future, the Viceroy said that it was clear that if the Joint War Committee was to meet efficiently the sudden strain that operations such as those on the frontier might throw on it, it must have a better equipped system of advanced dépôts and a scheme of finding without delay the necessary personnel of storekeepers, clerks, and similar establishment. It must have its own means of transport and a considerable stock of non-perishable stores ready to move up to any front which might require them. It was hoped that the Committee would shortly give place to a regularly constituted Indian Red Cross Society, adhering to the new world's league of Red Cross Societies, and having in common with the other adherents not only a military but a civil side. Civil work would probably begin with a scheme for assistance to civil hospitals.

Voluntary Effort in Disease Prevention in Bombay.

The value of voluntary work in conjunction with that of the Bombay Health Department on the occasion of the outbreaks of epidemic diseases in the city is emphasized in a recent report of the Medical Relief Committee of the Corporation. The Committee refers to the success of voluntary co-operation which was asked for and readily obtained when epidemic disease was recently raging in the city, and records with gratification that on this occasion not only did a large number of individuals volunteer their services to the Health Department, but that important bodies, such as the Social Service League, the Humanitarian League, the Hindu Medical Association, and the St. John Ambulance Brigade, organized their men and resources and carried on relief work in co-operation with the department. A committee was appointed to frame, in consultation with the health officer, a scheme for future working of volunteers and voluntary organization in connexion with the Health Department. Under this scheme it is proposed that the city should be divided into fifty units, each consisting of about 20,000 people. Each unit should have a committee, consisting of a chairman, two secretaries, and two members. Each committee would have an organization consisting of one doctor, two nurses, and not less than ten volunteers, the municipality to retain on an annual retaining fee of 100 rupees thirty doctors, from whom a binding undertaking should be taken to the effect that when called at the outbreak of an epidemic they should be prepared to give their whole time on a remuneration of 15 rupees a day. Arrangements should be made by the municipality to keep in store sufficient materials to furnish and equip temporary hospitals of 200 beds. When once these hospitals are equipped by the municipality they should be worked by voluntary agencies as far as possible.

Rural Health in the Punjab.

The Board of Health has recommended the appointment of rural health officers in three districts: (1) In some particularly unhealthy district, such as Gurgaon; (2) in some particularly advanced district, such as Jullundur, where the rural population is likely to be ready to welcome measures of improvement; (3) in Rotak, because the district board there has shown special enterprise in appointing a rural health inspector of its own and raising a tax to meet the expense. The Board has laid stress on the importance of making the health officers a provincial service and not subordinated to district boards. On the question of curative and preventive staff within a district, the Board has recommended that the civil surgeon and the health officer should be separate authorities side by side, the latter corresponding to the Sanitary Commissioner and the former to the Inspector-General of Civil Hospitals.

Western Medicine in the East.

The annual report of the South Travancore Medical Mission for 1918, issued by the London Missionary Society, states that the institution has seventeen hospitals and dispensaries scattered over a hundred miles from near Cape Comorin to the north of Quilon. To these some 120,000 patients come every year. The Neyyoor Hospital has accommodation for 60 in-patients, but in 1918 beds had to be provided for 100. During the year the wards in the women's department were frequently crowded. In the Leper Homes there are 45 patients, 35 male and 10 female. Intravenous injections of sodium gynocardate, according to the method of Leonard Rogers, was followed, when the disease was not far advanced, by improvement, but it is too early to say whether cures can be effected. During the two years previous to the date of the report the operation of posterior gastro-enterostomy was performed 75 times. Every year the number of people in Travancore who applied on account of gross lesions of the stomach and duodenum in the region of the pylorus became greater. Six or seven years ago such cases were scarcely ever seen in the hospital. In 11 of the 43 cases last operated on hookworms were found. Five of the 75 patients died after the operation, 4 of them of bronchopneumonia during the influenza epidemic, which affected Travancore very seriously. The total number of major operations performed during 1918 was 356 with 15 deaths; of minor operations there were 1,212.

Correspondence.

THE TERRITORIAL FORCE MEDICAL SERVICE.

SIR,—I have received letters from thirty-four territorial medical officers asking me to state my views in your journal.

The purport of their letters is that, as the senior medical officer (T.), I had rather an extensive acquaintance with all ranks, having previously had long experience as a Volunteer medical officer, having been intimately associated with the various Volunteer medical societies, having been chairman of the Senior Medical Officers' Association, on the committee of the Volunteer Medical Association, and commandant of the Volunteer School of Ambulance Instruction for fourteen years, during which time some 780 medical officers and over 12,000 non-commissioned officers and men had obtained their (p.) or A.F. E596.

Sixteen years' experience as regimental medical officer and nineteen years as a brigade surgeon, during which time I never missed a training and was senior medical officer to four different brigades, convinced me that the regimental system, however socially happy, was absolutely wrong, and militated against the medical officers ever being united, and so a powerful factor. As senior medical officer I had sometimes been able during the training of a brigade to get a medical officer of one unit to do duty with another, and others have been out with a bearer company.

Eventually in 1902, after numerous meetings of the Senior Medical Officers' Association, a scheme was submitted to the War Office, and later a deputation had an interview with the Under-Secretary. Ultimately the majority of our requests were granted, but the most important was refused, namely, that the Volunteer Medical Service should be represented at the War Office, as other branches of the Volunteer service were.

For several years after this I had a paper at the Annual Meeting of the British Medical Association on volunteer medical affairs, chiefly on training and organization. Later I was on a committee of the British Medical Association, of which Colonel E. Wilson, C.B., was chairman; we prepared a scheme for a Territorial Medical Service at the request of the War Office. In 1907, when Lord Haldane formulated his medical scheme for his Army Act, at a meeting of the profession at the Royal College of Physicians, at which he and the D.G.A.M.S. spoke in detail, Sir Frederick Treves proposed, and I was selected to second, the resolution recommending the Volunteer medical officers and profession loyally to support the scheme. I pointed out how desirable it would be to have a S.M.O. at the War Office, with temporary rank of surgeon-general. This did not fructify, and here I would mention that during the war numerous consultants of the *à la suite* Territorial staff and Colonial M.O.'s have been temporary surgeon-generals (now major-generals); no Territorial medical officer, pure and simple, has been similarly honoured.

In the R.A.M.C.(T.) the moving of Territorial M.O.'s should not only be permitted, but when desirable should be insisted upon; it can be generally carried out easily, if the A.D.M.S.(T.) has any tact.

I found out in the City of London Division, where all the units were comparatively near, and where I, having entirely retired from practice, could devote the whole of my time, and perhaps could spend more money on a hobby than many men in practice could, things were difficult: difficulties which must have been almost impossibilities for the A.D.M.S.(T.) of a wide area, because no man with a decent practice, if he could have afforded the money, could have spared the time.

Transfers from one division to another were also possible. I transferred several at their request, and one of the officers of the division succeeded me while another became the A.D.M.S.(T.) of another division.

From this it would be realized that all A.D.M.S.(T.) should be permanently employed, or receive consolidated allowance to recompense them for their loss of time and consequent diminution of fees. One should be permanently at the War Office as director of the Territorial Medical Service with the rank and pay of major-general.

Having been on duty at home all through the war, I can give no personal opinion as to the merits or demerits of the executive personnel or equipment in the field. I would, however, suggest that for peace training field ambulances should be divided into four sections instead of, as at present, into three, so that when a brigade is entirely split up into regiments each should have its self-contained medical unit. I would also suggest that once in three years a general hospital should train in conjunction with its division, and that, as I had with the First London Division, members of the sanitary company should be attached to the units and brigades for training.

My suggestions may be summarized as follows:

1. A senior Territorial officer at the War Office, with rank and pay of major-general.
2. Consolidated pay for all A.D.M.S.(T.).
3. Increase of pay to all R.A.M.C.(T.) M.O.'s to meet increased cost of living and locumtenent.
4. More use of R.A.M.C.(T.) schools.
5. Personnel of general hospital to train every three years with its division.
6. Sanitary company to detail men for camp to brigades.
7. Division of field ambulance in peace into four self-containing sections.—I am, etc.,

PETER BROOME-GILES,
Colonel A.M.S.

Military Convalescent Hospital, Ashton-in-Makerfield, Lancs, August 3rd.

SIR,—The various letters on this subject have not drawn sufficient attention to the need for the formation of a separate and independent Territorial Force Medical Department. At the present time there is supposed to be such an arrangement, but it is really subservient to the regular service.

The Territorial Force Medical Department should have its own director-general and a staff composed of Territorial Force officers only; there are two reasons for this: in the first place they have had equal opportunities as the Regulars during this war for assimilating knowledge, with probably very much more front-line experience, and, secondly, Territorial Force officers would much prefer to "run their own show."

In view of the fact that the Territorial work is voluntary, it would seem to be only reasonable that so-called "half-pay" appointments should be offered to Territorial Force medical officers; the soldier would not suffer by this arrangement, as these officers would be men who were practising their profession daily, whereas the regular officer would probably have left the professional side of his work years ago.—I am, etc.,

August 5th. T. F.

MALARIA REDUCTION IN CYPRUS.

SIR,—Nearly twenty-two years have now elapsed since I first saw one of the parasites of malaria in mosquitos (August 20th, 1897), and since you so courageously published my first description of that find (BRITISH MEDICAL JOURNAL, December 18th, 1897). It is therefore a suitable time to call attention to one of the most successful anti-malaria campaigns hitherto conducted in the light of that and of subsequent observations—the campaign in Cyprus. Details will be found in the annual medical report for 1918, published at the Government Printing Office, Nicosia, Cyprus, and obtainable from Government booksellers in London.

The work was started in 1913, when the Governor, now Sir Hamilton Goold-Adams, G.C.M.G., invited me to report on malaria in the island, and when I drew up a scheme for him. The fall in the number of cases of malaria throughout the island has since then been steadily maintained during five years. The figures for district and rural dispensaries from 1913 to 1918 inclusive have been 7,342, 6,257, 4,371, 3,614, 2,593, 2,205. The total cases treated were 10,035 in 1912 and 2,414 in 1918. The average spleen rate of the children in the island has fallen *pari passu* from 1913 to 1918, as shown by the figures, 17.2, 15.3, 11.5, 7.6, 6.0, 5.1. There was a small recrudescence in the Famagusta district in 1918, ascribed to incomplete pumping of an extensive breeding lake owing to war conditions. The report adds a brief summary of the draining, filling-in, screening, oiling, stocking with fish, etc., executed during the year.

These results have been obtained with very small means indeed. The credit of them is due entirely to the Chief

Medical Officer of Cyprus, Dr. R. A. Cleveland, and to his worthy staff. I suppose that with the present organization of the medical profession it would be foolish to hope for them any rewards for a mere sanitary victory, however distinguished, such as are so frequently given for victories in other fields; but perhaps, Sir, you will allow me to express publicly my own humble personal thanks to them for the loyalty and determination with which they have followed the advice that I was privileged to give them in 1913. I should like also to thank the Government of Cyprus for its invariable support of their efforts.—I am, etc.,

London, N.W., Aug. 12th. RONALD ROSS.

A POST-GRADUATE SCHOOL IN LONDON.

SIR,—I think it very doubtful whether any scheme of post-graduate teaching in London can succeed until there is one good general hospital which devotes itself entirely to the needs of graduates. To give special post-graduate instruction at an ordinary London teaching hospital is almost impossible, for the time and energy of the staff are already fully taken up by the claims of the undergraduate students. The ideal thing would be for a first class teaching hospital of central situation (such as University College or the Middlesex) to devote itself entirely to post-graduates and to affiliate to itself some of the special hospitals in its vicinity. If the teaching at the post-graduate hospital was chiefly done in the morning, special courses by selected teachers at the outlying general hospitals could be arranged in the afternoons. There should be a club house and secretarial offices, with an information bureau at the post-graduate general hospital, and three courses of instruction annually should be arranged, each lasting three months. Substantial fees should be charged and all teachers adequately paid. If these conditions are fulfilled there can be no doubt that London might become a great post-graduate teaching centre; till then I must describe myself as—

August 9th. SCEPTICAL.

SIR,—The letters from Sir Arbuthnot Lane and Sir StClair Thomson in your issue of August 9th are timely. Post-graduate instruction has existed in London for many years, but it has been a poor sickly plant. During the last few months, thanks to the Fellowship of Medicine, it has revived, but it will again die down unless we in London very promptly see that this is not allowed. London ought to have, and it will be a national disgrace if it does not have, the finest post-graduate school in the world, for it has the best clinical material, but we must act quickly or other countries will forestall us. I know that some enthusiasts are at work on this subject; everyone in any way he can must help.—I am, etc.,

London, W., Aug. 12th. WILLIAM HALE-WHITE.

SIR,—It is greatly to be hoped that the organization of a post-graduate school in London will not be delayed or even fall through while the Post-graduate Association and the Fellowship of Medicine are settling their differences. From many conversations I have had with visitors from the U.S.A. and from our own dependencies and colonies, I am quite sure they are all returning to their respective countries full of goodwill and gratitude for the arrangements made for them by the committee of the Fellowship of Medicine. The name is now well known, the committee is trusted, and the head quarters familiar. Surely it would be a grievous pity if this valuable asset in goodwill were to be scrapped by the setting up of a new and totally unknown body. Why not continue the name, unite all our forces, and make the scheme a grand success?—I am, etc.,

London, W., Aug. 12 h. ERIC PRITCHARD.

THE ILEO-CAECAL SPHINCTER.

SIR,—Mr. Rendle Short's observations on the ileo-caecal valve in man will be welcomed particularly by all who are seeking to enlarge our knowledge concerning the mechanism of the ileo-caecal tract. Sir William Macewen described a case very similar to Mr. Short's in his Huxley Lecture. I think that Mr. Short is right in his belief that his are the first observations on the effect of applying acid or alkaline media to the caecal mucous membrane on the opening and closing of the ileo-caecal orific—at least, so far as man is concerned. In a paper published in the *Proceedings* of the Anatomical Society, November, 1903, I have reported equally negative effects on the ileo-caecal sphincter of the mouse. I published at the same time the announcement that the ileo-caecal orifice is guarded by a sphincter in man and in all vertebrate animals, this being, so far as I know, the first mention of the existence of such a sphincter. At the same time, and quite independently of my observations, not only was the existence of this sphincter announced, but the conditions under which it acts were fully described by Dr. T. R. Elliott.—I am, etc.,

ARTHUR KEITH.

Royal College of Surgeons, Lincoln's Inn Fields, London, W.C., August 11th.

NATIONAL INSURANCE.

SIR,—I have been instructed by the President, Dr. John Playfair, and the Executive Committee of the Medical Guild to submit for your consideration the following suggestions embodied in certain resolutions passed at recent meetings of the Guild, after full consideration of the memorandum of the Insurance Commissioners and the report of the Insurance Acts Committee of the British Medical Association on the revision of the conditions of service under the National Health Insurance Acts and possible extensions of service.

1. Professional attendance and treatment given to any insured person by any registered medical practitioner acting solely on the usual understanding subsisting between a practitioner and his private patient, shall be recognized as medical benefit for that person, and such person shall receive a just contribution from moneys provided for medical benefit towards the payment of such attendance and treatment.

It has been estimated that there are approximately 20,000 insured persons in Edinburgh who receive professional attendance and treatment from non-panel practitioners, and as this number is increasing annually, it is a matter of justice that those persons should be allowed a money contribution towards payment of such attendance and treatment, especially when the fact is taken into account that the large sum of money for payment of the medical benefit of those persons is being paid to or distributed among the panel practitioners, who do not work, and never will have the opportunity of working, for this money. This statement is applicable to other towns and cities.

2. That obstetric practice should not be included within the range of national health insurance.

3. That tuberculosis should be excluded from the range of national health insurance.

4. That the National Insurance Acts as at present administered should not be extended, with the exception of specialist's advice to the present insured.

5. That a State medical service is of urgent necessity for the genuinely necessitous classes of the community, and for them only.

—I am, etc.,

FREDERICK PORTER,
Honorary Secretary.

The Medical Guild,
65, Morningside Road, Edinburgh.

SUPPLY OF SERUMS AND VACCINES FOR INSURANCE PATIENTS.

SIR,—In your issue of July 26th there appears a letter from Dr. Campbell of Duns, Berwickshire, showing that he was successful in having a supply of antitetanic serum "warranted" by the National Insurance Commission for Scotland. Presumably he is a rural practitioner who has contracted to supply necessary remedies, and the case is similar to that of Dr. Fisher *v.* the Hertfordshire Insurance Committee, where Dr. Smith Whitaker ruled that expensive remedies like serums and vaccines were "drugs" which must be supplied under the contract by the practitioner who undertook dispensing. As a natural corollary, this decision would be expected to include the supply of serums and vaccines by druggists on prescription by a panel doctor who did not dispense.

I applied for a supply of staphylococcus vaccine through

the clerk of the Northumberland Insurance Committee and received the following reply:

In reply to the question which you asked on the telephone as to whether you could supply (by prescription through a druggist) the vaccine referred to by you, I have to inform you that the Insurance Committee resolved that serums and vaccines could not be dispensed. I have spoken to the Chairman of the Medical Benefit Subcommittee and he confirms this. (July 23rd, 1919.)

The vaccine required was for an insured person for whom I had not contracted to dispense. Is it possible that Dr. Smith Whitaker, who lectured Dr. Fisher like a schoolboy in regard to the matter, and whose extraordinary decision is beyond appeal, has omitted to notify Insurance Committees that serums and vaccines are ordinary "drugs"?

I may state that in Northumberland the capitation fee allowed for drugs and appliances to doctors who contract to dispense runs about 1s. 3d. per annum.

I take this opportunity of referring to another extraordinary statement of the same commissioner made at the conference of medical practitioners at Newcastle-on-Tyne. Dr. Welsh of Felton, a rural practitioner, gave a capital exposition of the arduous work in a country district, and the inadequate remuneration allowed, and Dr. Smith Whitaker said it was understood that rural patients required very little attendance, and the rate of remuneration was accordingly fixed at practically the same capitation fee as in thickly populated districts. He surmised that the condition of things must now have changed since the institution of the National Insurance scheme. I can only suggest that he must be a very poor judge of human nature, and has never practised as a club doctor, or he would have understood that contract patients demand attendance and treatment for every trifling ailment, since it does not involve facing the payment of a proportionate bill.

Dr. Smith Whitaker also reminded us that 4s. 6d. is the capitation fee allowed by the Insurance Act, and the Exchequer grant of 2s. 6d. is an extra conditional on the keeping of records. I hope the Insurance Acts Committee will insist that, records or no records, the basis capitation fee for negotiation in regard to increased remuneration is 7s. 6d. and not 4s. 6d.—I am, etc.,

Blyth, Northumberland, July 30th. ARCHD. FAIRLIE, M.D.

LOCAL CLINICAL LABORATORIES.

SIR,—After attending conferences and reading correspondence and reports of meetings, one is at times tempted to wonder how far the profession as a whole is really interested in the establishment of an improved medical service. Such matters as remuneration, certificates, control, and the like are certainly important, but yet one feels that were it generally recognized that we were fighting for more than our own personal advantage such things would be more easily adjusted.

It seems to me that the most pressing necessity is the provision of adequate clinical laboratories. In M. 25 there is a brief reference to such, but no one seems to pay much attention to it. It may be that our indifference is due to the fact that one portion of the profession has adequate laboratory assistance while the other has scarcely realized what it is missing.

A good many of us were rescued from the slough of general practice and for a few years were enabled to indulge in a more scientific form of practice in the army hospitals. Now while we are in the process of sinking back to our former state I think many of us are still able to see some ways in which our work might be improved.

It would appear from M. 25 that the intention is, in the first place, at all events, to establish laboratories in connexion with the medical schools. This, I think, is utterly wrong. What we most want in practice is to have clinical laboratories scattered throughout the country, so that they may be within reach of the majority of the profession. To send a specimen from an obscure case to a central laboratory, have it examined by someone one knows nothing of, and receive a formal report, is frequently most unsatisfying. We should be able to meet the clinical pathologist, to discuss the case with him, and to consider jointly what is the significance of his report. How often one has had light thrown on dark places by such a consultation! What I would urge is that a small laboratory under the charge of a clinical pathologist should be established in at least every moderate-sized county, and that consultations between the pathologist and the clinician should be encouraged in every way. By this means I feel confident a much more scientific spirit might be infused into the practice of medicine, with enormous advantage to the doctor, the patient, and the community in general. These local laboratories might be connected with a parent institution in the medical schools, where special research work could be carried out. The cost need not be great—a lesson that has been learned during the war.

There might at first be some difficulty in obtaining a sufficient staff of clinical pathologists; but men could be trained fairly rapidly, and if adequate salaries were paid and a system of promotion from small to large laboratories arranged, the demand would soon produce the supply.

I venture to press this matter at present because I feel confident it is of the utmost importance, and I would again emphasize my opinion that central laboratories will not meet the requirements of the profession. There must be a much closer relationship between the clinical and the scientific sides of the profession, and that relationship can best be fostered by bringing laboratories to the practitioners.—I am, etc.,

Hamilton, July 17th. HUGH MILLER.

THE ETIOLOGY OF AORTIC REGURGITATION.

SIR,—One statement in Dr. Knyvett Gordon's letter (July 26th, p. 117) compels me to crave permission for a further remark. Dr. Gordon asserts that I do not bring "forward any *evidence*" that the endocarditis met with in scarlet fever is septic in origin.

I am surprised that Dr. Gordon should adopt such an attitude, since he laid stress upon the presence of micro-organisms in the diseased spots in the valves. If Dr. Gordon believes that scarlet fever caused the endocarditis, it is his place to bring forward evidence that the endocarditis was not septic in origin. It seems to me that the only way to prove that the endocarditis was not due to septic infection, but due to scarlet fever, would be to prove that the micro-organisms were the cause of the scarlet fever. In my last letter I assumed that Dr. Gordon would not consider that to be possible, and would admit the force of my contention.

In conclusion, it may be remarked that I have been interested in Dr. Gordon's experience regarding scarlet fever and endocarditis, but may repeat that I consider it to have no bearing on chronic valvular disease, the subject upon which I alone intended to comment when I ventured to express views upon the etiology of chronic aortic regurgitation.—I am, etc.,

July 30th. THEODORE FISHER.

SUDDEN DEATH UNDER AN ANAESTHETIC.

SIR,—Dr. Levy states in his letter of July 26th: "I am not aware of any textbook which directs attention to the dangers of restricted chloroform or of intermittent administration." May I refer him, for a start, to two of the most familiar textbooks, Hewitt's and Dudley Buxton's? On p. 404 of the former and p. 228 of the latter (1912 and 1907 editions respectively) he will find continuity of administration and danger of insufficient dosage clearly dealt with. I doubt, in fact, whether a textbook exists in English which does not lay down similar rules to those there propounded, just as I am sure that no teacher to-day fails to impress on the beginner the need for giving chloroform without gaps and in quantity sufficient to maintain full anaesthesia.—I am, etc.,

London, W., July 31st. J. BLOMFIELD.

SIR,—An anaesthetic experience of twenty years—the majority of patients having been throat cases—leads me to conclude that chloroform for tonsillectomies should be administered only by thoroughly experienced men, and, that when so given, it is as safe as ether, especially in the case of children, and gives a better anaesthesia for the surgeon. Up to eighteen months ago I never gave anything but chloroform and oxygen, except on the rarest occasions, for throat work. At that time two or three surgeons for

whom I gave anaesthetics were much impressed with the safety of open ether. Since then I have used it in a large proportion of my cases, but, on reverting a few weeks ago to chloroform and oxygen, the results have been better. Even with a preliminary injection of atropine with ether there is more secretion, more bleeding, a long induction period, and a large amount of the drug must be used. The two critical periods of a chloroform anaesthesia are towards the end of the induction, when the patient is inclined to struggle, and secondly, if the tonsil is forcibly dragged upon while being dissected off the pharyngeal wall. There is a simple remedy in both these cases. In the first, if there is marked struggling, changing over to ether for a few minutes saves the patient from a sudden large dose of chloroform, while the second can be obviated by gentler manipulations on the part of the surgeon.

In America many deaths have been recorded under open ether anaesthesia, and in a clinic of one well known throat surgeon I understand ether has been entirely given up in favour of chloroform.

In conclusion, I think that the anaesthetist ought to fall in as much as possible with the views of the surgeon with whom he is working, as the latter cannot do his work well if he is being worried by what he considers a dangerous anaesthetic.—I am, etc.,

HUGH R. PHILLIPS, M.D.,
Senior Anaesthetist, Italian Hospital; late Anaesthetist, King George R.A.F. Hospital, etc.

London, W., Aug. 5th.

INFECTIVE CATARRHS—SO-CALLED "COLDS."

SIR,—The term "chill" will persist because, as a matter of fact, in nine cases out of ten a chill—either in the form of a draught, a sudden change of temperature, wet feet or knees, etc.—*is* the exciting cause of an infective catarrh, notwithstanding all the theoretical arguments of all the scientists to the contrary. Behind the chill is an unstable vasomotor system, which in turn depends upon an unstable sympathetic nervous system, and lastly comes the micro-organism, which is the final cause of the catarrh.

With an unstable vasomotor system a chill produces a localized vaso-constriction, with a compensatory vaso-dilatation elsewhere. If this vaso-dilated area happens to occur in the mucous membrane of the nasopharynx or bronchial tubes, it provides, as it were, an incubator for the organism lurking there, which suddenly bursts into activity and a catarrh results. It is useless to try to prove that it was not the chill which supplied the spark to the conflagration. The oft-repeated argument that patients in sanatoriums and Arctic explorers do not suffer from catarrhs simply goes to show that in such people the vasomotor system is more stable—partly because they have become accustomed to cold and draughts, but even more because their nervous systems are more stable in consequence of their more regular life, with the absence of brain fag. Their nerve force, neuro-electricity, or whatever it may be called, is more stable. It is not being rushed about from one part of the body to another, as is the case with city workers, who use their brains actively for a time, then rush all their nerve force to the digestion of a too hurriedly eaten lunch, then send it back to their heads, and then to their legs to catch a train, and so on. I have lately had a striking instance in myself. I had a very long and strenuous day, but worked in a large room with a wide-open window. In the evening, being head-weary, I imagined that I was very hungry and ate more than I should have done under the circumstances. I then went for a walk and later in the evening sat for a time in a slight draught. I suddenly felt a chill, and that night, although my windows were open, I developed a severe catarrh, which laid me up for several days. I had not, as far as I know, been near anyone suffering from any kind of catarrh, and I had not been in a closed room. I had the necessary germ in me (where it had probably existed for months), and it only needed the proper conditions to enable it to burst into activity. These were supplied by the vaso-motor system, which had been rendered unstable by the inconsiderate and uneven work put upon the nerve force during the day.

The most evil suggestion in the present correspondence, to my mind, is the general use of vaccines. Few things produce a more harmful effect upon the system as a whole than vaccines. A vaccine may give relief in a specific instance, but even then it is at the expense of the system generally, and the continued use of vaccines does incalculable harm. Every time I meet a certain friend who is an eminent bacteriologist he tells me how he has just stopped an infective catarrh in himself by a vaccine. He reminds me of the asthmatic patients who claim that a certain specific remedy has cured their asthma. On asking how often they required to use the remedy, they reply: "Not more than ten or twelve times a day."

Until we can lead more healthy lives generally, and especially improve our nervous equilibrium, and thereby the stability of our vasomotor system, chills and infective catarrhs will remain with us. Open windows alone will not cure them. By all means let us do everything possible to prevent the spread of micro-organisms, but each one of us has sufficient organisms in his system to produce an infective catarrh, and no vaccines will eradicate them. What we need most is to do away with the internal conditions necessary for the propagation and development of these organisms.—I am, etc.,

London, W., Aug. 2nd. ALEXANDER FRANCIS.

ETIOLOGICAL FACTORS OF TUBERCULOSIS.

SIR,—Dr. Batty Shaw's outspoken lecture that appeared in your issue of July 26th has given a new insight to the tuberculosis question which is in accordance with the advanced knowledge of the present day. Some of us who have been engaged for years in tuberculosis work have felt for a long time that the tendency to lay undue emphasis on the dangers of tubercle infection is neither scientific nor supported by clinical experience. Clinical observation has shown that tuberculosis is a disease of many years, that the so-called early case is really a recrudescence of an affection that had been active years ago and has subsided, that a large number of cases give no history of contact with infection, that infection has lost much of its significance since it is so universal, that clinical signs and symptoms of tuberculosis are much more reliable evidence than the presence or absence of bacilli in the sputum. If tubercle bacilli were absent in about 18½ per cent. of cases at the Brompton Hospital, our records give negative evidence in about 30 per cent. and those of Phipps Institute, Pennsylvania, in about 36 per cent. of cases. Even the theory of childhood infection, which is nearer the truth than contact infection in adults, only pushes back the problem to infancy, but does not solve it with any satisfaction. The logical outcome of belief in contagious or contact theory, as Dr. Shaw points out, is, or ought to be, strong antibacillary measures, such as compulsory notification of every case of tuberculosis, compulsory segregation of every patient from the time he brings up sputum, compulsory inoculation both for treatment and prevention, daily or frequent medical inspection and disinfection of every suspect case or home, prosecution, fines, and imprisonment for every offence or disobedience, etc. Are we prepared to go to such extreme lengths? If we are not, it is because we do not believe in their efficacy.

On the other hand, the very success of the open-air treatment in saving hundreds of lives all over the world proves that as better social and economic conditions and improved well-being cure or arrest the disease, so bad social and hygienic conditions must be its cause. My own conviction, strengthened by twenty years of close sanatorium work, is that tuberculosis is primarily a soil or social disease, that it is not the seed that creates the soil but more truly the soil that creates the seed or gives virulence to it. Tuberculosis is as common as civilization, and civilization means cow's milk, artificial food, tinned food, frozen food, faked food, adulterated food, stale food—all of which by depriving the organism of fresh raw materials and vital elements necessary in maintaining the normal health of the body starve and impair the tissue soil and metabolism and bring about a strumous or tuberculous condition. The cry of the tuberculous is a cry of hunger—hunger for more air, more light, more fresh food, more rest, and better living conditions. A strong conviction that tuberculosis is a social or constitutional disease would lend vigour and enthusiasm to widen every municipal and national movement to arrest the disease—such movement as fresh air homes, sanatoriums, health centres, colonies, garden cities, invalid homes or hospitals, etc. The very fact that there are at present many schemes for opening country homes and settlements for the broken down tuberculous soldier—broken in war or

at home—shows that we are on the right lines of treatment. But the profession must decide whether it is fundamentally a contagious or constitutional disease. It cannot face both ways. Meanwhile Dr. Shaw's lecture has taken us a step further in emphasizing the importance of improving environment rather than killing infection.—I am, etc.,

Wells, Somerset, Aug. 3rd. C. MUTHU.

MEDICAL APPOINTMENTS UNDER THE MINISTRY OF PENSIONS.

SIR,—Sir Douglas Haig has forcibly expressed his lack of confidence in the existing Pensions Medical Boards, his opinion being founded on reports he has received from officers and men who have been before these boards and consider that they have received neither "sympathy" nor "sentiment." Why? Because the personnel of such boards has been and is still mainly composed of medical men who have never heard a shell burst or a bomb drop, and have not the vaguest idea of the environment in which the cases they examine received their injuries. How can such medical men, whose knowledge of the late war is drawn from the illustrated papers, expect to enter into the feelings of, say, a case of shell shock, or properly to assess his disability? Hence all the trouble, and hence Sir Douglas Haig's vigorous criticism.

As regards the work done by the members of the profession who stayed at home, nobody denies it. But they never risked their skins, and never lacked a bed or a roof over their heads. It is rather amusing, therefore, to hear them speak as if they had, with great self-denial, refrained from taking part in a pleasant picnic. And it is somewhat tragic to find that they have persuaded not only themselves but a considerable body of the public that this is so.—I am, etc.,

July 26th. IN ARDUIS FIDELIS (T.F.).

The Services.

INDIAN MEDICAL SERVICE.

NEW RATES OF PAY.

THE India Office notifies as follows:

The new rates of pay, of which particulars follow, have been arrived at by adding approximately 33⅓ per cent. to that portion of the old rates of pay which represented military grade pay. The old rates are shown in the second column for comparison. The new rates are effective from December 1st, 1918, and the necessary adjustments will be carried out as soon as possible.

A. *Military Side.*

These rates were previously announced in May, but at that time the rates for the civil side were not available. They are now republished with the civil rates in order that full information for the whole service may be available.

	(1) New Rate. Rs. p.m.	(2) Old Rate for Charge of a Regiment. Rs. p.m.
Lieutenants	550	(450)[1]
Captains	700	(550)
Captains (after 5 years' total service)	750	(600)
Captains (after 7 years' total service)	800	(650)
Captains (after 10 years' total service)	900	(700)
Majors	1,000	(800)
Majors (after 3 years' service as such)	1,150	(900)
Lieut.-Colonels	1,550	(1,250)
Lieut.-Colonels (of over 25 years' service)	1,600	(1,300)
Lieut.-Colonels (selected for increased pay)	1,750	(1,400)

The new rates are consolidated and include charge pay for the command of station hospitals.

The following rates are those for certain of the higher military appointments:

	(1) New Rate. Rs. p.m.	(2) Old Rate. Rs. p.m.
D.D.M.S. (if held by a Major-General)	2,650	(2,200)
D.D.M.S. and A.D.M.S. (if held by a Colonel)	2,150	(1,800)
A.D.M.S. of Aden: Inspector of Medical Services, Army Headquarters; A.D.M.S. in the Field (when held by an officer below Colonel's rank); Officer Commanding general hospital in the field of 500 beds	1,950	(1,600)
A.D.M.S., Army Headquarters	1,700	(1,400)

[1] In the case of a lieutenant the rate for an officer in officiating charge only has been shown, as this is the most probable position of a lieutenant.

B. *Civil Side.*

1. The rates for certain of the superior appointments are as follows:

	(1) New Rate. Rs. p.m.	(2) Old Rate. Rs. p.m.	
Director-General	3,500	3,000	
Deputy Director-General	2,150	1,500	Rates drawn by present incumbents
Assistant Director-General	1,700	1,400	
Surgeon-General, Bengal, Madras and Bombay	3,000	2,500	
Inspectors-General of Civil Hospitals in non-Presidency Provinces[2]	2,600	2,250	
Sanitary Commissioner to Government of India	2,300–2,800	2,000–2,500	
Sanitary Commissioner (for all provinces except Central Provinces and Assam)	1,800–2,100	1,250–1,800	
Sanitary Commissioner, Central Provinces and Assam	1,550–2,050		
Inspectors-General of Prisons, Madras, Bengal, Burma, Bombay, and United Provinces	2,100–2,300	1,500–2,000	
Inspectors-General of Prisons, Punjab, and Bihar and Orissa	2,100		
Inspectors-General of Prisons, Central Provinces	1,800		

2. The distinction between first and second class civil surgeoncies is abolished, and holders of these appointments will, in future, be paid at the new consolidated rates, given under A above, according to their military rank. This change results in increases varying accordlng to rank from Rs. 200[3]–400 per mensem.

3. Holders of professorial and bacteriological appointments will, like civil surgeons, be paid at the new consolidated rates, given under A above, *plus* a special allowance of Rs. 250 per mensem. The resultant increase over the old rates varies from Rs. 150 per mensem in the case of junior captains to Rs. 400 per mensem in the case of senior lieutenant-colonels.

4. Holders of other special classes of appointments will receive the consolidated pay of rank, as under A above, *plus* special allowances of differing amounts—for example, alienists and plague officers Rs. 200 per mensem, superintendents of first-class gaols Rs. 150 per mensem, personal assistants to surgeons-general Rs. 100 per mensem, superintendents of second-class gaols Rs. 50 per mensem.

The examples above are not exhaustive, but are given as illustrations of the manner in which the principle previously announced has been carried into effect.

PALESTINE DISPATCH.

FIELD-MARSHAL SIR EDMUND ALLENBY, G.C.B., G.C.M.G., Commander-in-Chief, Egyptian Expeditionary Force, in the course of a dispatch dated June 28th, 1919, describing events in Syria and Palestine subsequent to the conclusion of the armistice with Turkey on October 31st, 1918, says:

> The climate was trying and sometimes extremely unhealthy. That the health and morale of the men was maintained was due to their own inimitable spirit and willingness; to the constant care and foresight of the medical authorities; and to the organizations, official and private, which provided in spite of all difficulties for the comfort and recreation of the troops.

In recording his appreciation of services rendered, the Commander-in-Chief refers to the medical services as follows:

> The medical services have dealt successfully with the difficulties of evacuation over long distances in a country of undeveloped communications, and have combated with excellent results the chief scourge of Syria and Palestine—malaria. I desire to mention the good work of Major-General A. E. C. Keble and Major-General Sir R. H. Luce as Directors of Medical Services at various periods.

The King of Hellenes has appointed Surgeon Commander Thomas W. Myles, R.N., to be an Officer of the Order of George I, in recognition of distinguished services rendered during the war.

[2] Corresponding to the appointments of surgeon-general in the three Presidency provinces.

[3] Assuming that a civil surgeoncy is not held by an officer of lower rank than a captain.

Universities and Colleges.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

FIRST EXAMINATION FOR THE FELLOWSHIP.

A CORRESPONDENT, late R.A.M.C., who finds himself ineligible for the first examination for the diploma of Fellow on the special conditions issued by the College at the end of January, writes to express the opinion that if facilities are to be given (and those in respect of ancillary studies difficult for a service man to return to) all who joined voluntarily should be given them. With regard to the subjects in which relief is given (morphology, embryology, histological or chemical methods, and physiological laboratory apparatus) he writes: A certain standard of knowledge in certain subjects has hitherto been demanded in the Primary Fellowship. If, however, the College could be satisfied that this standard had been attained by practical experience, they might reasonably allow a candidate to skip portions of the actual examination. For instance, one would consider it reasonable to allow a professor of anatomy to be passed

through the anatomy part of the examination without actually facing the examiners. But to apply this principle for these ancillary subjects *because of military service* is quite illogical. How can any one have attained by being on military service the standard of knowledge sufficient to warrant him being excused examination? Much more likely that his nomadic life will have diminished the knowledge he once had. If it were a question of the Final Fellowship, it would be a different matter. Many men must have had opportunities for getting practical knowledge of the subjects which would warrant the assumption that they were up to standard. Even then, to give the facility to some and not to others would not be fair.

Obituary.

DR. FRANCIS HENRY WEEKES, formerly of York, died at Malvern on July 31st at the age of 65. He received his medical education at St. Thomas's Hospital, and took the diplomas of M.R.C.S. and L.S.A. in 1877; he was house-surgeon to that hospital, and afterwards to the York County Hospital, a post he retained for some years, until he settled in general practice in York as the successor of the late Dr. Bird. He became surgeon to York Dispensary, and continued to be interested in surgery, taking the F.R.C.S.Eng. in 1885. For twenty-five years he had an extensive general practice in York and the neighbourhood, earning for himself a high place in the regard and esteem of all who knew him, not only for his professional ability, but for his gentle kindliness backed by generous actions. He took the degree of M.D.Durh. in 1905, and his keen interest in the profession continued to the end. He had many other interests. All scientific subjects attracted him, but he took a special interest in archaeology. Of late years he travelled widely and with an observant eye. Many of his professional brethren and very many others will much regret to learn that he has succumbed to a long illness well and patiently borne.

LIEUT.-COLONEL WILLIAM HILL CLIMO, R.A.M.C.(ret.), died at Yateley, Hants, on July 22nd, aged 80. He was born at Blacksod, co. Mayo, on November 4th, 1838, and took the degree of M.D. Queen's University, Ireland, and the diploma of M.R.C.S.Eng. in 1860. He entered the army as assistant surgeon on April 1st, 1861, became surgeon on March 1st, 1873, surgeon-major on April 1st, 1876, and brigade-surgeon on March 19th, 1890, retiring on November 4th, 1893. In the regimental days he served in the Rifle Brigade from 1862 to 1868, and subsequently on the staff. He took an active part in the controversies which preceded the reforms in the Army Medical Service. While in India he published (1892) a series of papers pointing out the danger to the public health of Northern India arising out of the insanitary condition of Kashmir, and made various recommendations which he considered well within the resources of the Kashmir State.

CAPTAIN J. MACLEOD, R.A.M.C., was reported as accidentally killed, in a casualty list published on August 4th.

ERNST HEINRICH HAECKEL, the German biologist who died at Jena on August 8th at the age of 85, was born at Potsdam, studied at Würzburg under Kölliker and at Berlin under Johannes Muller and Virchow. There he took the degree of doctor of medicine in 1857, and afterwards spent some years in practice, but his true vocation was biology. He became extraordinary professor of comparative anatomy and director of the Zoological Institute at Jena in 1862. In 1865 a chair of zoology was founded for him and he remained at Jena for the rest of his life, refusing many offers of promotion. He travelled extensively for the prosecution of his researches in comparative anatomy. When Darwin's *Origin of Species* appeared in 1859 Haeckel at once accepted the new doctrine and pushed the theory much further than his more cautious master. Haeckel's literary activity was remarkable and continued unabated to the end of his life. He was intolerant and aggressive; his attitude towards religion was one of almost fanatical hostility and his teaching reached the extreme of materialism. Haeckel was one of the signatories of the manifesto issued by the German professors in October, 1914. His rabid hatred of this country, in which he had been welcomed as an honoured guest, showed the German temper at its worst.

Medical News.

DR. A. FINEGAN, Medical Superintendent of the Mental Hospital, Douglas, Isle of Man, who resigned the post on July 31st, has received a presentation from the staff. It consisted of a rose bowl; the presentation was made on behalf of the staff by Dr. Y. Kadam, A.M.O.

DR. ANTONIO JOSÉ DE ALMEIDA, the new President of the Portuguese Republic, began his political career while still a student of medicine at Coimbra, where he suffered imprisonment for three months; afterwards for some ten years he practised in the island of Sao Thomé, a Portuguese colony in the Gulf of Guinea. Since the revolution Dr. Almeida has been almost continuously in office as Minister.

MR. R. DAVIES-COLLEY, C.M.G., M.Ch., F.R.C.S., having completed his military duties, has returned to practice in London, and has resumed his work at Guy's Hospital.

IT is proposed to establish in Italy a society for the study of questions relative to the alimentation of man and animals. A part of its work is to be the co-ordination of the results of investigators in all countries, and it proposes to publish a review giving a summary of researches. Communications should be addressed to Professor Napoleone Passerini, Istituto Agrario di Scandicci, Florence, or to Professor Ronoloni, Laboratorio di Patologia Generale, Via Alfani, 33, Florence.

THE French hospital founded at Athens mainly through the efforts of Dr. Portmann, a medical officer of the French navy, was formally opened by M. de Billy, the French Minister, in the presence of M. Athanassaki, Under Secretary of the state health board, Professor Bensis, dean of the faculty of medicine, and a number of representative Greek and French citizens. The hospital contains 53 beds, and there is a bacteriological department under the direction of Dr. Potiriades.

THE National Association for the Prevention of Tuberculosis will hold its seventh annual congress at the Central Hall, Westminster, in October. It will be opened on October 16th by Dr. Christopher Addison. The conference will be concerned with the discussion of the completion of tuberculosis schemes in relation to the Ministry of Health, and local authorities and Insurance Committees. On the first day the relation of the schemes to pensions boards and committees, and general practitioners, will be discussed, and addresses will be delivered by, among others, Sir R. W. Philip, professor of tuberculosis in the University of Edinburgh, Dr. Hermann Biggs of New York, Dr. Nathan Raw, M.P., Dr. Cunyngham Brown (of the Ministry of Pensions), and Dr. F. N. K. Menzies (of the London Public Health Department). On October 17th and 18th the relation of the schemes to Red Cross and other voluntary activities, and the training of doctors and nurses will be discussed by, among others, Sir Arthur Stanley, G.B.E., Sir William Osler, and Sir German Sims Woodhead.

THE task of establishing an International Council of Scientific Research has been carried a step further by the meeting held last month in Brussels at the invitation of the King of the Belgians and Burgomaster Max. The scheme had its origin in a meeting called by the Royal Society in London last October. The second conference was held in Paris in November, when an international executive committee was appointed. Great progress has been made in establishing international associations for astronomy and geophysics, and steps have been taken to establish a similar association for chemistry; this proved a more difficult task owing to the numerous industrial applications. The meeting in Brussels prepared schemes for associations of a number of other sciences, including pure and applied biology. These schemes will all require national recognition, which it is hoped may be obtained before the first day of next year. The general assemblies of the council will be held in Brussels, but the business office will remain in London.

IN a report presented to the annual meeting of the American Medical Association it was stated that the number of medical practitioners in the United States was larger in proportion to population than in any other civilized country. According to the sixth edition of the *American Medical Directory*, completed in 1918, there were then 147,812 doctors in the States. The total population, according to an estimate furnished by the Census Bureau in 1918, was 105,253,300. This gives one practitioner for every 712 people. Statistics gathered just before the war showed that the proportion in European countries ranged from 1 in 1,500 to 1 in 2,500. The total

enrolment of medical students for the session 1918–19 is approximately 120,090, being 1,540 less than the number for 1917–18.

IN consequence of the occurrence of a small number of outbreaks of small-pox during recent months, the Ministry of Health has issued a memorandum for the use of medical officers of health with regard to the supply and use of vaccine lymph for the vaccination or revaccination of persons who may have been exposed to small-pox infection. It is considered necessary to emphasize the importance of obtaining the prompt vaccination of such persons, because cases have recently come to notice in which known contacts have not been offered vaccination promptly and subsequently have developed small-pox. It is the duty of the medical officer of health immediately to acquaint the public vaccinator and vaccination officer when cases of small-pox come to his notice, and of the public vaccinator to vaccinate or revaccinate at the public expense persons in his district who apply to him for the purpose and have not been vaccinated or revaccinated within a period of ten years. The Government Lymph Establishment will supply medical officers of health with lymph, which it advises should be used within a week. Only medical officers of ports in frequent communication with the Continent are advised to keep themselves supplied with stocks of lymph for emergency use. The memorandum contains the following further statement: "Recent experience shows that it is important to bear in mind that inspectors or others concerned with the removal of small-pox cases or the disinfection of their clothing, and members of hospital staffs who at any time are likely to come into contact with a small-pox case, should at all times be well protected by revaccination, and should not take the risk of waiting to be vaccinated until exposure to infection has occurred."

Letters, Notes, and Answers.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated.*

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C.2, on receipt of proof.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL.

The postal address of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is 429, Strand, London, W.C.2. The telegraphic addresses are:

1. EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology, Westrand, London*; telephone, 2631, Gerrard.
2. FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate, Westrand, London;* telephone, 2630, Gerrard.
3. MEDICAL SECRETARY, *Medisecra, Westrand, London;* telephone, 2634, Gerrard. The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin.

QUERIES AND ANSWERS.

"P." asks for advice in the treatment of a man in whom, owing to neglected gleet, the inguinal glands have been destroyed, leaving a large suppurating cavity. The following methods of treatment have been tried: (1) Swabbing out with carbolic solution (1 in 40) night and morning, and packing with sal alembroth gauze; (2) swabbing with carbolic solution followed by painting with a solution of silver nitrate gr.xxx ad ʒj; (3) swabbing three times daily with a solution of mercuric potassium iodide (1 in 1,000) and packing.

INCOME TAX.

J. E. L.—Can the cash basis method of return be insisted on if the surveyor objects?

*** The cash basis system is in almost universal use, unless there are circumstances rendering the "cash" profit an untrue index of the true profit based on the value of the year's bookings. If there are no such circumstances in our correspondent's case he might ask the surveyor why he declines to accept the usual basis of return for medical practices, and write again if he has further difficulty.

E. S. H. W. inquires as to the purport of a request received from the surveyor with regard to the sale of a motor car, for information as to the cost and description of the new car.

*** The surveyor has no statutory right to demand the information, but is presumably merely endeavouring to obtain it for the purpose of making a correct assessment. There is no right to deduct as such a loss on sale of a professional car; the claim lies to deduct the expenditure incurred in replacing a car. The surveyor apparently seeks to know, first, that there was a replacement, and second, to what extent the purchase of the "replacement" car was merely a reinstatement; or, on the other hand—if the cost of the new car be greater than that of the original car—to what extent it represents a further outlay of capital on the equipment of the practice.

LETTERS, NOTES, ETC.

A COMPLICATED CASE OF HYDRAMNIOS.

E. F. writes: I was called to see a patient in labour. Having seen her previously at different periods, I knew there was a history of renal disease with cardiac complications. She gave a history pointing to six months pregnancy, but the abdomen was markedly distended and fluctuation was present. I felt what appeared to be a soft fetal head, and in a little time a macerated fetus of two months was born. The umbilical cord was prolapsed and pulseless. Having delivered this, I next ruptured the membranes and typical amniotic fluid came away, the quantity being about 12 pints. There was no shock or any unusual symptoms. After some delay a large placenta came away; to its distal aspect another umbilical cord was attached, and later on a six months fetus, healthy and normal, was born as a breech. The interesting features are the twins—one two months old, the other six months old. I can only account for this by the younger fetus being dead, whilst the other developed as the younger was macerated. The case may be summed up as follows: (1) Prolapsed cord; (2) macerated fetus of two months; (3) double placenta; (4) healthy fetus of six months born by breech. The patient later succumbed to fits of eclampsia.

ACCESSORY FOOD FACTORS.

A CORRESPONDENT calls attention to the fact that, in our notice of the memorandum on the importance of accessory factors in food, no mention was made of onions as possessing antiscorbutic qualities. In response to an inquiry, Dr. Harriette Chick informs us that onions were omitted from the table in the memorandum by an oversight. An exhaustive investigation of onions has not been made, but cooked onions were studied, and it was found that they are at least as good as cooked potatoes, and may be much better. In reply to another correspondent, we may point out that the memorandum, as was stated in the JOURNAL of July 19th, p. 84, noted that green leaves are a cheap source of the fat-soluble vitamine, the absence of which is believed to produce rickets. It is recommended that juices expressed from cabbages or other green-leaf vegetables—raw, or after steaming but not boiling for a few minutes—should be given, as also a teaspoonful a day of purées prepared from cooked spinach or lettuce.

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 36, 40, 41, 42, 43, and 44 of our advertisement columns, and advertisements as to partnerships, assistantships, and locum tenencies at pages 37, 38, and 39.

WORKMEN'S COMPENSATION ACT, 1906.

THE following vacancies are announced: (1) Second Medical Referee for the Sheriffdom of the Lothians and Peebles, to be attached more particularly to the Midlothian County Court; (2) Specialist Medical Referee for cases of Industrial Disease in County Court Circuits Nos. 24, 28, 30, 31, and 54; (3) Medical Referee for County Court Circuit No. 11, to be attached more particularly to the Bradford, Keighley, Otley, and Skipton County Courts. Applications for (1) to the Private Secretary, Scottish Office, Whitehall, S.W.1, and for (2) and (3) to the Private Secretary, Home Office, by September 4th.

THE following appointments for certifying factory surgeons are vacant: Abertillery (Monmouth), Bishop's Castle (Shropshire), Borrisoleigh (Tipperary), Darlington (Durham), Staveley (Westmorland), Tallow (Waterford).

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

	£	s.	d.
Seven lines and under	0	6	0
Each additional line	0	0	9
Whole single column	4	0	0
Whole page	12	0	0

An average line contains six words.

All remittances by Post Office Orders must be made payable to the British Medical Association at the General Post Office, London. No responsibility will be accepted for any such remittance not so safeguarded.

Advertisements should be delivered, addressed to the Manager, 429, Strand, London, not later than the first post on Wednesday morning preceding publication, and, if not paid for at the time, should be accompanied by a reference.

NOTE.—It is against the rules of the Post Office to receive *poste restante* letters addressed either in initials or numbers.